

ALSO IN OUR NEWS SECTION ■ Many of your counterparts in Canada think you're way overpaid. PAGE 6
Microsoft security execs Mike Nash and Scott Charney speak out. PAGE 10

COMPUTERWORLD

THE VOICE OF IT MANAGEMENT • WWW.COMPUTERWORLD.COM

JUNE 7, 2004 • VOL. 38 • NO. 23 • \$5/COPY

Delta, Boeing to Test RFID on Engine Parts

Airline hopes to improve inventory tracking; aviation industry seeks common standards

BY BOB BREWIN

Delta Air Lines Inc. and The Boeing Co. next month plan to start testing the use of radio frequency identification tags to track airplane engine parts — a trial run that may herald widespread RFID adoption by airlines and suppliers of aircraft components.

The test at Delta dovetails with plans by Chicago-based Boeing and rival aircraft maker Airbus SAS to jointly develop RFID standards for the aviation industry. Boeing and

Toulouse, France-based Airbus will host the first of three Global Aviation RFID Forums in Atlanta this week to start the standardization process with airlines and suppliers. Similar meetings are planned in Hong Kong and Munich this summer.

Kenneth Porad, program manager for Boeing's automated identification program, said his company and Airbus have decided to "speak with a single voice" on using RFID tech-

RFID, page 61

CA's Kumar Resigns; Some Users Welcome Departure

He should 'get out of the way,' one user says

BY MATT HAMBLEN

The announcement on Friday of Sanjay Kumar's departure from Computer Associates International Inc. disheartened some users who liked his focus on improved customer service. But it

pleased others who had been concerned about his oversight of a company charged with accounting irregularities.

"Frankly, when [Kumar] was ousted as CEO, I was surprised he was staying on with the company," said Erica Harzewski, a Temecula, Calif.-based database admini-

Kumar, page 16



SANJAY KUMAR

#BXBBJFT*****CAR-RT LOT#B-052
#0234939/CB/0# CW2004230 002 5700

91

PROQUEST

PO BOX 984

ANN ARBOR MI 48106-0984

25-6

COMPUTERWORLD HONORS 2004

IT Heroes Think Big

THIS YEAR'S AWARD FINALISTS forged ahead with ambitious IT projects despite obstacles. For example, a New York firm moved its data recovery site 1,000 miles away. A state revamped its database of traffic accidents in hopes of saving lives. And new tablet software may help doctors in developing countries make diagnoses.

THE PROFILES START ON PAGE 29.



'Open-Source' Solaris Plan Draws Lukewarm Response

Some analysts doubt Sun's move to extend Java model to OS will appeal to corporate users

BY PATRICK THIBODEAU

Sun Microsystems Inc.'s announcement last week that it plans to make Solaris an "open-source" operating system was met with mixed reactions from users and skepticism from open-source advocates.

"I'm totally nonplussed by the announcement," said Dale Pickford, chief infrastructure officer at Ocwen Technology Xchange Inc., the technology subsidiary of financial services company Ocwen Financial Corp. in West Palm Beach, Fla.

INSIDE

Sun adds disk arrays, subscription-based storage pricing. Page 16

Ocwen last year consolidated around 140 servers into several high-end Sun servers running Solaris — one with more than 100 processors. For smaller servers with four or fewer CPUs, Linux on Intel is suitable, Pickford said. But for systems larger than that, "the Sparc [processor] and Solaris environment really comes into its own," he said. "And once you start playing at that level anyway, you don't want to be messing with the OS."

Terry Verity, CIO at Seneca College in Toronto, runs 66 Solaris, page 16

CISCO IP PHONE
7970 SERIES



COMPANIES THAT PUT VOICE ON THE NETWORK CHOOSE THE COMPANY THAT BUILT THE NETWORK.

When voice joins data on a secure network, some remarkable things can happen. Instead of managing different flavors of PBX from location to location, you can handle everything from one place, saving time and money—not to mention mileage on IT staff shoes. And with over 20 years of proven networking experience, Cisco has become the standard for millions of voice IP users around the world. It's why over half of the Global 500 have chosen Cisco to rethink the way they handle voice. And their business. Are you in yet? To learn how Cisco can help you plan, design and implement an end-to-end IP solution, visit cisco.com/go/ipcn.
NOW, OVER THREE MILLION PEOPLE ARE USING CISCO IP PHONES.

CISCO SYSTEMS



THIS IS THE POWER OF THE NETWORK. NOW.

©2004 Cisco Systems, Inc. All rights reserved. Cisco, Cisco IOS, and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

Faster than the fastest gun
in the West who's holding
fast to fasting while he fast-
forwards fast and furiously.

That fast.



BrightStor® ARCserve® Backup Release 11

Faster and easier to use than ever.

When it comes to data backup and recovery, you want a reliable, high-performance solution you can count on. That's why we've created BrightStor ARCserve Backup 11, featuring the very latest in storage innovations. BrightStor ARCserve Backup is faster and easier than ever, enhancing both efficiency and productivity. And with CA's superior technology, you can be confident your files are properly backed up and will easily be restored should a disaster occur. For more information, go to ca.com/storage/arcserve.

**FREE
TRIAL**

Free trial of BrightStor
ARCserve Backup Release 11.
Visit ca.com/storage/arcserve
or call 1-866-558-2798.



Computer **Associates**®

CONTENTS



FIELD REPORT

Refurnishing the Supply Chain

In the Technology section: A \$14 million warehouse and transportation system overhaul at office furniture maker Haworth Inc. cut costs significantly, paying back the initial investment in just nine months. **Page 39**



06.07.04

Bridging the Financial Skills Gap

In the Management section: Despite the recent focus on cost-cutting, many IT staffs still lack the financial skills needed to track project payback. But some companies are changing that situation. **Page 45**

NEWS

- 6 U.S. IT workers are overpaid, say Canadian IT executives.
- 7 Some SQL Server users say the elimination of fees for fail-over databases could give Microsoft an edge over Oracle.
- 7 California's identity theft law hasn't generated the expected onslaught of lawsuits.
- 10 Q&A: Microsoft exec Mike Nash discusses Windows XP Service Pack 2 and outlines the vendor's security strategy.
- 12 EMC packages its Centera arrays with e-mail and document-archiving software to ease regulatory compliance.
- 12 Microsoft tightens links between its CRM and Office 2003 applications.
- 13 Offshore development puts software vendors on the hot seat at a congressional hearing on security.
- 16 Sun offers a subscription-based pricing plan for its high-end disk arrays.
- 19 Start-up ITM Software finalizes a suite of IT management tools that has been likened to an ERP system for CIOs.
- 22 Sony drops plans to introduce new models of its Clie handhelds outside of Japan.
- 61 Citigroup is installing a video streaming system for 300,000 desktop PCs.

COMPUTERWORLD HONORS 2004

This year's select **HONORS FINALISTS** found new ways to cut waste, advance their industries and, in some cases, save lives.

29 **The Depository Trust & Clearing Corp.** A multihop remote data-replication scheme allows DTCC to push the edge of its disaster recovery effort.

32 **Exostar LLC.** Five of the largest aerospace and defense firms use Exostar's Forum-Pass 2.0 to store and share sensitive data.
JEFF NIGRINY

Exostar's Jeff Nigriny explains how they do it.

33 **Michigan DOT.** A redesigned traffic-accident database could save lives, improve highway design and cut costs.

36 **SAT Corp.** A handheld device helps refineries move from paper-based systems to computerized workflow management. Workers use it to catch small problems before they become big ones.

37 **Robertson Research Institute.** The NxOpinion project aims to help physicians in underserved communities make rapid and accurate diagnoses using a massive, interactive knowledge base.

OPINIONS

8 On the Mark: **Mark Hall** says you should forget server monitoring and watch your applications instead.

26 **Maryfran Johnson** finds that readers do care about the separation of editorial content and advertising.

26 **Pimm Fox** knows this about people: Their love of convenience will trump their privacy concerns about increased security screenings.

27 **Dan Gillmor** sees another important message in the pictures from Abu Ghraib: We're no longer able to keep things covered up.

44 **Paul A. Strassmann** says the Defense Department has become a pioneer in IT systems architecture.

52 **Paul Glen** wonders how you know when an IT project has gotten to "done."

62 **Frankly Speaking: Frank Hayes** sounds the death knell for big IT projects. He says system overhauls and other initiatives that once required giant leaps can now be accomplished with a series of small steps.

DEPARTMENTS/RESOURCES

At Deadline Briefs	6
News Briefs	8, 12
Letters	27
IT Careers	55
Company Index	60
How to Contact CW	60
Shark Tank	62

ONLINE

WWW.COMPUTERWORLD.COM

A New Chapter in Malware

SECURITY: The Witty worm represented some scary malware firsts and is likely a harbinger of threats to come. IT professionals need to understand Witty and what it did, writes Counterpane CTO Bruce Schneier.

• QuickLink 47272

Why Is This Project So Expensive?

DEVELOPMENT: A coder on the front lines wonders why we don't design software with the future in mind. • QuickLink 47071

Letter of the Law: E-Document Retention Policies

IT MANAGEMENT: There are no one-size-fits-all policies, but Steven C. Bennett of law firm Jones Day offers advice on how to craft the best document-retention policy for your company. • QuickLink 47147

How to Justify Security Training

SECURITY: Training can provide a lot of organizational and personal payoffs if you know how to sell the idea to management. One of these ideas might get you signed up for that class or conference you want to attend.

• QuickLink 47097

Wanted: Managed Storage Service Supplier

STORAGE: To keep its staff focused on core competencies, a global law firm turns to Sun Microsystems to manage its 20TB SAN.

• QuickLink 47114

ONLINE DEPARTMENTS

- Breaking News
• QuickLink a1510
- Newsletter
• QuickLink a1430
- Subscriptions
• QuickLink a2570
- Knowledge Centers
• QuickLink a2570
- The Online Store
• QuickLink a2420

AT DEADLINE

Symbol Pays \$40M To Settle Probes

Symbol Technologies Inc. said it will pay a total of \$40 million to settle accounting investigations by the U.S. attorney in New York and the U.S. Securities and Exchange Commission. Holtsville, N.Y.-based Symbol said the settlements will let it avoid criminal charges, although the SEC did file a civil action charging the company with securities fraud and other violations. Similar charges were lodged against 11 former Symbol executives.

Symbol also has agreed to settle two shareholder class-action suits by paying \$1.75 million in cash plus stock valued at a total of \$96.25 million. It still faces two other shareholder suits over accounting irregularities dating back to 1998. But CEO William Nuti said Symbol's new management team has "succeeded in putting the vast majority of our problems behind us."

IT Glitch Delays Bank's Processing

Royal Bank of Canada disclosed that a computer glitch was delaying its processing of deposits, withdrawals and payments, leaving the bank unable to provide up-to-date account balances. The Toronto-based bank said the problems began "during a routine programming update" to one of its systems. The glitch forced bank workers to recheck and verify tens of millions of transactions daily.

Intel Increases Q2 Revenue Forecast

Intel Corp. raised its second-quarter revenue forecast to the high end of the range it previously had predicted, citing strong flash-memory demand. Intel now expects revenue of \$8 billion to \$8.2 billion. Chief Financial Officer Andy Bryant said sales of PC processors are running 19% higher than they were in last year's second quarter, which is in line with Intel's expectations.

Canadian IT Execs Say U.S. Peers Are Overpaid

Suggest high wages fuel offshore moves; Canada benefits as a nearshore provider

BY PATRICK THIBODEAU
KANANASKIS, ALBERTA

ASK A GROUP OF Canadian CIOs if they think U.S. IT workers are overpaid. After the laughter dies down, there will be a lot of affirmative head-nodding.

"They are grossly overpaid, certainly relative to Canadian scales," said Allen Borak, vice president of information systems at Canadian Pacific Railway Ltd. in Calgary, Alberta. "It's quite astounding."

Borak, who's completing an IT compensation study comparing wage rates, said IT manager salaries in the U.S. are as much as 25% higher than those for similar positions in Canada after being adjusted for the currency exchange rate. "I was surprised by the difference," he said.

Some Canadian CIOs suggest that a key reason U.S. workers are facing a larger offshore threat than their northern counterparts is because of their high pay. They see evidence of such high wages when U.S. providers bid on consulting services with hourly rates of \$200.

"The American market is overheated," said Michael Finlayson, national manager for information services at Toyota Canada Inc. in Scarborough, Ontario. And IT is "adding high costs into an organization as a whole," he said.

Looking Offshore

But Canadian IT executives aren't ignoring the offshore option, which their U.S. peers use to reduce labor costs.

Alex Federucci, senior manager of information systems and services at Talisman Energy Inc., an oil and gas company in Calgary, said that although offshore pricing pressure has

yet to affect Canadian IT salaries, she expects that it will.

Talisman outsources 90% of its IT labor but owns the assets, which outsourcingers manage in-house. Federucci said she's interested in taking some low-risk IT services work offshore. "I think the price is going to go down on the commodity business," she said.

But because of its lower IT wages and an exchange rate that puts the Canadian dollar at about 25% below the U.S. dollar, Canada is an attractive nearshore outsourcing destination for U.S. companies.

RIS Resource Information Systems Inc., an application development and maintenance

[U.S. IT workers] are grossly overpaid, certainly relative to Canadian scales. It's quite astounding.

ALLEN BORAK, VICE PRESIDENT OF IS, CANADIAN PACIFIC RAILWAY

outsourcer that sponsored a CIO conference here last week, is seeing steady growth in nearshore work from the U.S.: Two years ago, it accounted for none of its business; now it makes up 15%. The Calgary-based company estimates that Canadian IT salaries are about 30% below those of U.S. IT workers, before the exchange rate is considered.

But even RIS is going offshore to lower costs, having opened a facility last year in Romania. Workers there are paid about half as much as their Canadian counterparts.

Indeed, Borak, who uses RIS for some application development work, wants the company to shift more work to Eastern Europe to give him a "blended rate" that could lower his development costs by as much as 20%.

Some Canadian IT managers said many IT positions, especially those that demand ERP skills, could see a wage increase. "Truly qualified people are difficult to find," said Janet Topic, vice president of IT at Trimac Corp., a Calgary-based transportation company.

U.S. companies are also in need of people who have ERP experience, and some firms look north for them, Topic noted. "They actually recruit out of Canada," she said, adding that some Canadian workers go to the U.S. for those jobs and the higher pay. • 47346

One Canadian's View From Above

Peter Thompson founded RIS Resource Information Systems in 1979 as an application support and maintenance company. RIS now employs about 400 workers and does about 15% of its business as a nearshore outsourcing provider for U.S. companies. In an interview last week, Thompson, president and CEO of RIS, assessed the effect of offshore and nearshore work on U.S. IT wages.

How can nearshore providers compete against offshore operations in India with their lower prices? In application support and maintenance, the issue for the Indian companies is that the problems are occurring when they are asleep. Companies want instantaneous information. Application support and maintenance doesn't work offshore. We use a Romanian firm as our offshore option. But we funnel things there, like conversions and enhancements.

where you spec it and send it.

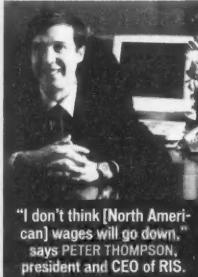
You've expressed the view that worldwide, there should be equal pay for equal work. Can you elaborate on that? This is my view long term. I think the Internet is the great equalizer, and there will come a point, whether you are living in India, Romania or China and are doing IT work, that you will get paid the same, more or less. There are geographic differences. You will

get paid more in New York City than in Buffalo, but the huge differences will disappear.

So, what's your message to the U.S. IT worker? I wouldn't worry. I think the value of the U.S. worker will always be business-related. The U.S. IT worker will be designing the applications for the business, testing them, putting them in. They'll probably be maintained somewhere else.

In terms of the so-called commodity skills - infrastructure maintenance and application development and support - do you expect salaries in the U.S. to fall to match global rates? No. What I think will happen is the Indian rates will rise. Their wages will come up. We're already seeing that. They are having high turnover. I don't think [North American] wages will go down.

- Patrick Thibodeau



"I don't think [North American] wages will go down," says PETER THOMPSON, president and CEO of RIS.

One Year Later, California Identity Theft Law Remains Low-key

The regulation hasn't spurred predicted lawsuits but has increased awareness

BY JAIKUMAR VIJAYAN

Nearly a year after California's landmark SB 1386 identity theft law went into effect, there has been none of the troublesome litigation that had been predicted to come in its wake.

But the law has raised overall corporate awareness of the need to have strong privacy protections in place, legal experts said last week.

SB 1386, which went into effect July 1 last year, requires companies that do business with California residents to inform customers when their names, in combination with personally identifiable information, have been accessed by an unauthorized person [QuickLink 39515]. Some legal experts had expected the law to open a floodgate of trouble, especially because of the ambiguous nature of some of its provisions.

For instance, the law calls for companies to encrypt data but doesn't specify what level of encryption is considered legally acceptable. Similarly, the law isn't specific about the obligations of the IT organization, mandating only that companies notify customers when "it is reasonably believed" that personal information has been compromised.

Educational Impact

To date, there have been no publicly disclosed cases in which the provisions of the law have been tested in court.

"It appears that it didn't have quite the impact that was expected," said Arshad Noor, CEO of StrongAuth Inc., an identity and compliance management company in Cupertino, Calif. "There have been no lawsuits and no court cases [so far]."

But it would be a mistake to take that to mean the law has

not been effective, said Donald Harris, president of HR Privacy Solutions Ltd., a New York-based identity management consultancy. "Companies are trying to do whatever they can to avoid any kind of litigation or enforcement" under SB 1386, said Harris, who conducts corporate workshops on the issue.

"The very fact that the legal risk posed by the law has caused companies to enact

protective and responsive measures" demonstrates its value, echoed Erin Kenneally, a forensic analyst at the University of California, San Diego.

"Many organizations, if they have a good and well-funded staff of security professionals, are adding SB 1386 to whatever other compliance requirements they have in effect," said Stephen Wu, president of InfoSec Law Group PC in Mountain View, Calif.

The IT department at Latham & Watkins LLP, a Los Angeles-based law firm, is one example. "We've conducted

SB 1386 awareness training, reviewed our systems and databases that could be subject to the law and have determined how we would respond in the event of a breach," said Eric Goldreich, the firm's manager of technology.

And though no suits have been filed under the law, it has gotten companies to proactively notify customers of security breaches involving personal information, said Christopher Pierson, an attorney at Phoenix-based Lewis and Roca LLP. "There are some companies that are still waiting for case law to be

Senate Bill No. 1386

CHAPTER 915

After its initial introduction, add Section 1798.29 to, the Civil Code, relating to personal information.

Approved by Senate September 25, 2003.

Senate Bill No. 1386

SB 1386. Purpose. Personal information, as defined, is sensitive information of personal information by state agency, as defined, and requires each agency to keep an accurate account of disclosures made pursuant to specified procedures. Existing law discloses a business, as defined, to take all reasonable steps to attempt a quick repair, if certain personal information is breached. Existing law provides that a consumer may sue a data breach if the consumer can prove that the consumer's personal information was obtained without authorization. Existing law provides civil remedies for violations of these provisions.

This bill, operate a bill, L. 2003, would require a state agency or a person or business that contains business in its storage, that contains or uses unencrypted data that includes personal information, as defined, to provide notice to the consumer if the consumer's personal information is reasonably believed to have been obtained without authorization. This bill would provide the consumer with a cause of action.

California's SB 1386 privacy law

established" to fully implement SB 1386 requirements, Pierson said. "My advice is to err on the side of caution and not be the first test case for 1386." **47344**

Microsoft Puts SQL Server in Line With Rivals on Backup Databases

BY MARC L. SONGINI

Microsoft Corp. last week began letting SQL Server users who have Software Assurance contracts set up fail-over databases at no extra cost, a new policy that some customers said could give Microsoft an edge over Oracle Corp.

Microsoft last month announced that it would no longer charge Software Assurance customers for backup database servers, provided that the systems remain off unless the main database crashes or is corrupted and that they aren't used for processing on a regular basis.

Previously, users had to pay a variable fee to install a backup SQL Server database for disaster recovery purposes, said Sunny Charlebois, a product manager in Microsoft's worldwide licensing and pricing group.

"Our customers have told us that disaster recovery is an issue that matters to them," said Charlebois, who wouldn't disclose the earlier fees. She added that Microsoft's licensing policy now is "consistent with the competition."

Both Oracle and IBM, Microsoft's main database rivals, said they don't charge users extra for so-called cold-backup servers. However, Oracle limits the use of fail-over databases to 10 days per year, after which users have to buy a full license.

Weighing the Options

Tessco Technologies Inc., a Hunt Valley, Md.-based vendor of wireless products, uses both Oracle and SQL Server. But Hal Kuff, Tessco's systems and network manager, said he will consider directing future purchases toward SQL Server

because of the new fail-over policy.

For example, Tessco's IT staff is re-examining a plan to run a new supply chain application on an Oracle database.

"The Oracle test and disaster-recovery license model appears to be significantly more rigid," Kuff said. "We're wondering why Oracle is not taking a superior position in pricing." Tessco could save money by going with SQL Server, Kuff said, although he declined to estimate how much.

Jim Prevo, CIO at Green Mountain Coffee Roasters Inc. in Waterbury, Vt., said the

new approach on SQL Server might entice him to sign up for the Software Assurance program. Green Mountain runs both SQL Server and Oracle databases but is consolidating on Microsoft's technology. The licensing change "validates our decision to roll out all new platforms on SQL Server," Prevo said.

Ultimately, both vendors handle the configuration of cold-backup servers in much the same way, said Charles Garry, a Meta Group Inc. analyst. But he added that Microsoft's new policy seems to be more lenient than Oracle's.

Jacqueline Woods, vice president of global pricing and licensing strategy at Oracle, said Microsoft's move merely brings its fail-over policy for SQL Server in line with Oracle's. Woods said it's unlikely that an Oracle database would crash unless a major disaster brought it down, and she added that it shouldn't take more than 10 days to bring a primary database back up.

In addition, if a primary database server remains down and its backup is kept running as a replacement, a company wouldn't have to pay for another Oracle license because it would already be covered by the existing one, Woods said.

47324

Database Licensing Policies

MICROSOFT

■ Users who have Software Assurance contracts can store copies of their databases on cold-backup servers that must be turned off until needed.

ORACLE

■ Users can cluster together two database servers and bring the backup one online if the primary database fails or becomes corrupted.

■ A full license has to be bought for the secondary database if it's used for more than 10 days during a calendar year.

BRIEFS**Sears Finalizes IT Pact with CSC**

Sears, Roebuck and Co. said it has finalized a 10-year, \$1.6 billion IT infrastructure support services outsourcing deal with Computer Sciences Corp. The contract's value is \$400 million less than Sears predicted when the retailer disclosed that it was negotiating with CSC [QuickLink 45543]. Sears said CSC will hire "substantially all" of the 260 IT staffers who manage its systems now, with the transfers due to start on June 12.

Oil Company, IBM Ink Outsourcing Deal

IBM announced that its Business Consulting Services unit has signed a seven-year deal to take over the management of some accounting functions at Marathon Oil Co., as well as the systems that support the operations. The value of the contract wasn't disclosed. An official at Houston-based Marathon said the deal will include the addition of new technology "beyond that which Marathon could provide alone."

Trial Starts in DOJ's Suit Against Oracle

The antitrust lawsuit that the U.S. Department of Justice filed in an attempt to block a takeover of PeopleSoft Inc. by Oracle Corp. is scheduled to go to trial today at U.S. District Court in San Francisco. Oracle last week claimed that the DOJ's case is built around "the most confusing, meaningless market definition ever pursued in a government merger challenge."

Network Associates Gets E-mail Patent

Network Associates Inc. said it has been granted a U.S. patent on various techniques used to filter unwanted e-mail. The Santa Clara, Calif.-based company joins a list of vendors that hold anti-spam patents with potentially broad implications.

C ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

**Don't Monitor Servers, Look at Your . . .**

... business operations instead. That's the conclusion of Gordon Arbesman, network administrator at The Worker Benefit Plans of the Lutheran Church-Missouri Synod in St. Louis. Arbesman used a 3.0 beta release of the eQ Management Suite from Heroix

Corp. to watch the condition of a critical business application for 50,000 church members participating in a variety of benefits programs.

And he's upgraded nearly 30 servers, with the final release due out today. Arbesman says that if you just watch the condition of individual servers, you may miss something important. For example, an ailing process that runs overnight on a separate server is unlikely to be noticed unless it's logically tied to the overall health of the application, which is exactly what eQ 3.0 does. He says the improved graphical presentation of the monitoring software gives him and line-of-business managers a quick view of the health of vital operations. Rick Lane, president of Newton, Mass.-based Heroix, says the upgrade also adds expanded trend reporting to help predict server performance and determine how effectively your multiprocessor servers are running. Arbesman hopes

Heroix will soon add dashboard capabilities to eQ because his CIO keeps bugging him for a quick "speedometer view" of overall operations. Good idea. Heaven help us if CIOs start playing with the monitoring tools themselves.

Wi-Fi is wonderful until you discover . . .

... that strangers can get network access while whiny executives can't. That's when you might consider evaluating WiFi Workplace, wireless network management software from Newbury Networks Inc. in Boston. The technical trick, according to CEO Michael Maggio, "is to be able to look at the air" like traditional network management tools can look at a wire. But it ain't easy. Wi-Fi's radio frequency signals travel with

er and you, bouncing through 3-D space with what can be generously described as imprecision. New-

bury's sensors feed data to the server-based WiFi Workplace management software, which builds graphical maps of the strength of signals. With that information, network managers can set policies about who can use Wi-Fi access points in physical locations, whether outside on a lawn or inside a conference room. Maggio doubts it "air traffic control for Wi-Fi." WiFi Workplace can also be used to optimize access point coverage, since you can actually see how effective signals are. Shipments are set to begin in September, with pricing starting at \$18,995.

"Actionable intelligence" gets a boost . . .

GNAUTOVICH
says DecisionSite will help intelligence analysts find meaning in loads of data.

... this month with a deal between Somerville, Mass.-based Spotfire Inc. and In-Q-Tel, the venture capital arm of the CIA. According to Spotfire President Rock Gnatovich, In-Q-Tel is making a small equity investment in his company, licensing its DecisionSite guided analytics software and assisting in the development of text-mining tools for agencies involved in national security. With DecisionSite analytics, intelligence analysts can quickly visualize mounds of structured and unstructured data into meaningful scenarios, sharing them with other analysts via browser-based DecisionSite Posters. Gnatovich says the ability to visualize the vast amounts of data available to the intelligence community lets "the brain make a comeback." That means analysts will be able to more quickly choose a course

of action. Watch out, Osama. We're coming.

Trust, but verify your incoming . . .

... e-mail with today's 4.1 upgrade to CipherTrust Inc.'s IronMail appliance. Trusted-Source is part of the new release. It's a dynamically updated list of e-mail sources that exhibit good e-mail behavior, such as protocol compliance, where the IP address matches the domain of the mail sender. It also lists mailing sites that abide by end-user unsubscribe requests. In addition, the upgrade adds more graphical reports and increases quarantine space for suspect mail.

Tighten Web services security . . .

... with the XS 40 gateway from DataPower Technology Inc. in Cambridge, Mass. The device secures XML and Web services components to an application by ensuring the integrity of a code's source as well as its function. The 3.0 software release adds support for application build policies developed in the open-source Eclipse development framework as well as IBM WebSphere Studio. It bolsters its authentication service through access controls that can determine what each user is permitted to do within an application. It also improves the performance and reliability of applications that use a mix of Web services and MQSeries components. The appliance integrates with traditional net-



DataPower's XS 40 gateway

work frameworks such as Computer Associates' Uni-center and IBM's Tivoli. Pricing starts at \$65,000, and it's available now. **47325**

FREE White Paper!

Get a FREE APC white paper to learn how to address today's top cooling needs in data centers.

Just mail or fax this completed coupon and you'll also receive our FREE InfraStruXure® brochure. Better yet, order both today at the APC Web site!

<http://promo.apc.com>

(888) 289-APCC x3163 • FAX: (401) 788-2797



Key Code
r534y

FREE White Paper! "Cooling Audit for Identifying Potential Cooling Problems in Data Centers"

YES! Please send me my FREE white paper - "Cooling Audit for Identifying Potential Cooling Problems in Data Centers" and InfraStruXure® brochure.

NO. I'm not interested at this time, but please add me to your mailing list.

Name: _____ Title: _____

Company: _____

Address: _____ Address 2: _____

City/Town: _____ State: _____ Zip: _____ Country: _____

Phone: _____ Fax: _____ E-mail: _____

Yes! Send me more information via e-mail and sign me up for APC PowerNews e-mail newsletter. Key Code r534y

What type of availability solution do you need?

- UPS: 0-16kVA (Single-phase) UPS: 10-80kVA (3-phase AC) UPS: 80+ kVA (3-phase AC) DC Power
- Network Enclosures and Racks Precision Air Conditioning Monitoring and Management
- Cables/Wires Mobile Protection Surge Protection UPS Upgrade Don't know

Purchase timeframe? <1 Month 1-3 Months 3-12 Months 1 Yr Plus Don't know

You are (check): Home/Home Office Business (<1000 employees) Large Corp. (>1000 employees)

Gov't, Education, Public Org. APC Sellers & Partners





NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON RI

POSTAGE WILL BE PAID BY ADDRESSEE



ATTENTION CRC: r534y
Department: B
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920



How to Contact APC

Call: (888) 289-APCC
use the extension on the reverse side

Fax: (401) 788-2797

Visit: <http://promo.apc.com>
use the key code on the reverse side



Legendary Reliability®

"InfraStruXure™ is perfect protection for our high power density blade servers."

Cliff Ritter, Director of IT ADCS, Inc.

With its modular, scalable and open building blocks, it's no wonder InfraStruXure's rack-based architecture is winning over editors and end-users alike – especially as blade servers and server consolidation cause power densities to skyrocket.

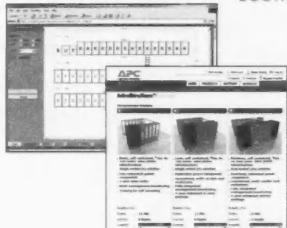
If you're not already dealing with such high power densities, the chances are you will be soon. An on-demand architecture for NCPI, InfraStruXure™ includes power, cooling, racks and physical structure, security and fire protection, cabling, and the management and servicing of these elements. It is specifically designed to meet ever-changing IT requirements through scalable, modular and standardized components.

For high density applications, the InfraStruXure High Density Configuration is a patent-pending hot aisle containment system that cools up to 20kW in a single enclosure.

Flexible enough to be moved or changed without system reconfiguration, the InfraStruXure High Density Configuration can also be scaled to meet changing needs and future expansion. This makes it a perfect solution for converted spaces, as well as high-density areas.

"More computing power, but with more heat... presents a serious problem for companies unprepared to meet the cooling demands of a data center..."

The InfraStruXure™ Build-Out Tool lets you design and specify InfraStruXure solutions using a Web-based configurator.



To learn more about InfraStruXure, call 1-888-ISX-2990 today or visit us at www.apc.com.

InfraStruXure

POWER > RACK > COOLING

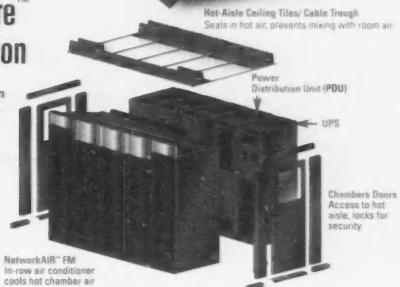
On-demand architecture for network-critical physical infrastructure

Introducing InfraStruXure™ High Density Configuration

The InfraStruXure™ High Density Configuration is a patent-pending hot aisle containment system that cools up to 20kW of blade servers in a single enclosure.

The InfraStruXure High Density Configuration is ideal for:

- Disaster Recovery Sites
- Blade Server Applications
- Converted Spaces



Receive your FREE APC White Paper:

"Cooling Audit for Identifying Potential Cooling Problems in Data Centers"

Visit <http://promo.apc.com>
Enter Key Code r534y
Call 888-289-APCC x3163
Fax 401-788-2797



APC
Legendary Reliability®

Microsoft Security Exec Details Windows XP Service Pack Plans

The release, due this summer, places strong emphasis on firewall capability

BY CAROL SLIWA

MICROSOFT CORP.'S latest security efforts are focused on Service Pack 2 for Windows XP, which is due this summer. **Mike Nash**, vice president of Microsoft's security business and technology unit, recently discussed SP2 and the company's security strategy with *Computerworld*. Excerpts from the interview follow:



Q&A

What guidance can you give IT pros about Windows XP Service Pack 2 breaking applications?

Making sure that we're doing things to make XP SP2 compatible with key customer scenarios is a top priority for us. One of the things with the new firewall in Service Pack 2 is to make sure that it's compatible with more scenarios so that it can be turned on by default and left on by the customers.

There may be some cases from a security perspective where we're doing things that change the behavior of the operating system. . . . There may be certain cases where security and compatibility are at odds, and we're going to focus on security, because people really need us to be focusing on security. . . . The most important thing customers should be doing right now is planning for their rollouts of Windows XP Service Pack 2, which means testing it today so that if there are issues, we get that feedback now so we have a chance to respond to it before we ship the product.

How important is the firewall in Windows XP SP2 for companies that already have network firewalls? When your machine is always inside the network, the

primary thing that the firewall's going to do is protect your machine from another infected machine that was brought inside the network. If you have a laptop that comes in with an infection, the edge [network firewall] can't help you. But your machine will be protected from that attack. So I never turn my firewall off.

The other thing that will happen, if a machine comes in with malicious code on it, its ability to propagate can be somewhat slowed down by having a firewall there. The primary place it makes a difference is for machines that are checking in remotely. We know a number of situations where an end user VPNs into the corporation and didn't have a firewall turned on. That machine is both out on the Internet but inside the corpo-

rate firewall] all at the same time. Think of it as redefining "edge of the network."

Will XP SP2's firewall work with other personal firewalls? It is designed to support multiple firewalls, ours and a third party's, at the same time. Practically speaking, if you're using a third-party firewall and you're comfortable with its level of protection, that's a fine answer. Our primary goal is to make sure that customers have a choice.

I think one of the key benefits of our firewall is that it can be managed using group policy. . . . In Windows XP Service Pack 2, we've done work to make the firewall manageable using group policy with Active Directory but also allow it to support multiple profiles. So I can set my policy to a rule that says, "When the machine is inside the corporate network, allow it to do more things even though the firewall is still on. When that machine is not on the corporate network, and it's sitting in

a coffee shop or in a hotel room or in someone's home, increase the level of protection because I don't have the corporate edge protected for that machine." That's something that an administrator could do by policy based on what's appropriate for their organization.

Someone at a large Microsoft customer that makes weapons systems for the government told me he believes that perfect software can be written. Is there any chance you'll rewrite Windows to take advantage of what you've learned about security? I'm not a person who believes that perfect software is possible at that kind of scale, because there's always going to be some level of vulnerability. Pragmatically, certainly we do everything we can to make sure that we're training our engineers on how to build and design secure code, making sure that we're testing our software and making the software configuration as secure as possible. But there are go-

ing to be vulnerabilities in software, and therefore the approach is to make sure that we create essentially countermeasures to make sure that even if there is a vulnerability, we can isolate the system software or the application from the malicious software that might try to attack it and drive more resiliency of how that software behaves under attack.

Does that approach represent a change in strategy? I wouldn't say it's a change in strategy as much as I would say it's a change in emphasis. Isolation and resiliency was something that we always understood. Being more pragmatic about how it could be used is what's different. If you look at why did we do Windows XP SP2, the original idea was, with the firewall built into Windows XP turned on, a customer wouldn't have been attacked by Blaster, even if they'd never installed a patch in their life. . . . We'll of course always work to improve quality. We're not letting up the gas at all on that. But as you go in and perhaps fix some of the quality issues, there is the risk of breaking things. You can introduce more problems, so you have to do that in a measured way.

© 47348

Microsoft Sees Need to Escalate Efforts in Security War

BOSTON

A Microsoft security executive said last week that the threat of potentially more destructive viruses makes it difficult to gauge whether the company is winning the war to protect its products from malicious attacks.

"It's hard to tell because we haven't seen some things yet that may reshape the dynamics," Scott Charney, Microsoft's chief security strategist, said during an interview with *Computerworld* at a company security summit here. "We haven't seen polymorphic viruses very much that change their signatures on the fly. The existing set of tools doesn't work with that. That's not just an issue for us, but [for] the antivirus

vendors" as well, he said.

Charney said the potential for more destructive viruses that could format or encrypt drives on the fly has made him a proponent of backing up data. "Hard drives became so reliable that people stopped backing up," he said. "And the industry stopped telling people to back up. Now I'm a huge proponent of it. I'm telling people to back up again, because we know that virus is coming."

Charney said Microsoft products are becoming more secure and easier to manage, and cus-

tomer feedback has shown that the company is starting to make a difference. "But we need to stay the course," he added. "We need to do more."

Microsoft has been reviewing and refining the Trustworthy Computing initiative it launched over two years ago, adding requirements for annual training to help software engineers keep up with changing threat models, according to Charney.

He said the company has also been testing a survey tool to more objectively measure how its software engineers are applying



CHARNEY: Initiative is making a difference, but "we need to do more."

their security and privacy training to their day-to-day work.

Charney said Microsoft has also launched a project called the Trustworthy Computing Inquiry Board, modeled after the National Transportation Safety Board. Microsoft currently does root-cause analysis, he noted, but that may not be enough. Some of his staff members took a course to learn more about the NTSB's methodology, which involves analyzing the series of events that occurred before and after an accident to see if it could have been prevented, Charney explained.

"They're trying this process to see what the report looks like in comparison," he said. "We continue to try and think outside the box."

- Carol Sliwa

CUT YOUR IT BUDGETS. NOW.

Sun Java™ Enterprise System.

Everything you need to run your business. Email, instant messaging, calendar, application server, portals, network identity, clustering, web server, security, enterprise messaging, interoperability, web service delivery, directory, firewalls, streaming video, grid computing and more - all for a single price of \$100/employee/year,¹ with an unlimited right to use. All-inclusive, no hidden costs. Software, service and support included. Our bet is that you will never spend too much on IT again.

Purchase a subscription to the Java Enterprise Developer Promotion and get a free Sun Fire® V20z AMD Opteron®-based server today.²



THE BLUEPRINT IN THE BACKGROUND DEMONSTRATES THE WORLD-CLASS SOFTWARE INFRASTRUCTURE AND INTELLIGENCE OF THE SUN JAVA ENTERPRISE SYSTEM. TODAY, 50 COMPANIES ARE USING THE SUN JAVA ENTERPRISE SYSTEM TO DELIVER NETWORK SERVICES TO OVER 110,000 ENTERPRISES AND MILLIONS OF THEIR CUSTOMERS WHILE SLASHING IT COSTS.

Java
ENTERPRISE
SYSTEM

FIND OUT HOW MUCH YOU CAN
GET AND HOW MUCH YOU CAN SAVE AT:
SUN.COM/JES

1. PRICING IS U.S. LIST PRICE. ALL PRICES ARE QUOTED IN U.S. DOLLARS. 2. OFFER VALID IN THE U.S. AND THROUGH SUN STORE ONLY. PROMOTION VALID THROUGH JUNE 30, 2004. FOR A LIMITED TIME ONLY. GET THE JAVA ENTERPRISE DEVELOPER PROMOTION. A VALUE OF OVER U.S. \$7000 FOR ONLY U.S. \$1499 PER YEAR FOR A 3-YEAR SUBSCRIPTION. SEE WEBSITE FOR DETAILS.
© 2004 SUN MICROSYSTEMS, INC. ALL RIGHTS RESERVED. SUN, SUN MICROSYSTEMS, THE SUN LOGO, JAVA, THE JAVA LOGO, SUN FIRE AND THE NETWORK IS THE COMPUTER ARE TRADEMARKS OR REGISTERED TRADEMARKS OF SUN MICROSYSTEMS, INC. IN THE UNITED STATES AND OTHER COUNTRIES.



The Network is the Computer™

BRIEFS

Accenture Awarded DHS Border IT Deal

The U.S. Department of Homeland Security said it has picked a team of vendors led by Accenture Ltd. to design, install and support a visitor-tracking system for land-border crossings. The contract could be worth up to \$10 billion over 10 years. The system, called US-VISIT, needs to be in place at the 50 busiest land crossings by year's end, the DHS said. (For more on US-VISIT, see Pimm Fox's column on page 26.)

Nortel Sees No Fast End to Restatement

Nortel Networks Corp. said it won't finish a restatement of its 2003 financial results and report this year's first-quarter numbers by June 30. Brampton, Ontario-based Nortel also said that the Royal Canadian Mounted Police are reviewing its accounting to see if an investigation is warranted. Nortel already faces a criminal probe in the U.S. and investigations by regulators in the U.S. and Canada.

SCO Ends Dispute With Key Investor

The SCO Group Inc. said it will buy back preferred shares held by BayStar Capital LP for \$13 million plus 2.1 million common shares. The deal resolves a dispute between SCO and Larkspur, Calif.-based BayStar, which has criticized the Lindon, Utah-based vendor's Unix software business and the high-profile stance that SCO adopted in its legal battles against Linux vendors and users.

Short Takes

Natick, Mass.-based CRM vendor EDNCS INC. has bought Minneapolis-based Firepond Inc.'s Brightware unit, which makes e-mail response management and customer service chat tools. The price wasn't disclosed. . . . FS NETWORKS INC. in Seattle said it has acquired MagniFire WebSystems Inc., a firewall vendor in New York, for \$29 million.

EMC Packages Centera With Software, Services

Disk array bundles provide storage for compliance efforts

BY LUCAS MEARIAN

EMC CORP. today plans to announce three technology bundles that combine its Centera fixed-data disk array with software and technical services for storing e-mail and documents to support regulatory compliance initiatives.

The preconfigured offerings include e-mail archiving tools from EMC's Legato Software division, plus document archiving and retrieval software from the storage vendor's Documentum unit and Mobius Management Systems Inc. in Rye, N.H.

EMC said the bundles can be used stand-alone or as part of information life-cycle management (ILM) applications that also involve its mainstream Symmetrix and Clariion arrays and its Celerra network-attached storage devices.

The combined offerings

give users more of a plug-and-play approach to buying storage hardware and software than does the a la carte sales model that EMC typically uses, said John Gubernat, the vendor's director of global solutions for compliance and enterprise content management.

Patched Together

CareGroup Inc., a Boston-based company that operates six hospitals, uses Symmetrix, Clariion and Centera devices as part of an ILM system for storing radiology images, patient records, e-mail and data from PeopleSoft Inc.'s ERP applications. But CIO John Halamka said his staff cobbled together the ILM setup the hard way, without the benefit of a packaged offering.

EMC's announcement should be "very good news" for users that haven't adopted a do-it-yourself strategy yet, Halamka said. He added that CareGroup over the past three years has combined EMC's storage hardware, Cisco switches and middleware in

WHAT EMC IS OFFERING

Software

- Legato EmailXaminer for Exchange and Notes
- Documentum Content Server, Compliance Manager, Records Manager and Trusted Content Services
- ViewDirect TCM

Services

- EMC installation and project management services
- Joint EMC/Mobius data migration assistance

an effort to address the regulatory requirements of the Health Insurance Portability and Accountability Act.

CareGroup's storage-area network backs up data from 175 Windows servers and 25 clustered Unix systems, storing X-rays and clinical records that are new or less than a year old on the high-end Symmetrix arrays. Files and images that are less than 10 years old are stored on Clariion devices. Once they surpass the

10-year mark, the records are shifted to Centera.

Halama said he wouldn't disclose the cost of the project, but he said CareGroup is saving more than \$3 million a year. Most of the savings can be attributed to not having to publish patient records on paper and radiological images on celluloid.

"Now the entire organization runs on electronic records," Halama said. "Our system will show you which X-ray has been shot and what class of storage it lives on. So if you click on something shot yesterday, you get it immediately. If it's something shot a year ago, you get it in 30 seconds. If it was shot 10 years ago, it takes a full minute."

Peter Gerr, an analyst at Enterprise Storage Group in Milford, Mass., said EMC's new packages may give users in regulated industries a level of comfort on compliance.

"They're also proving that they're working to integrate their acquisitions," Gerr said. "I don't think it's a mistake that two of the three bundles include Legato and Documentum software."

EMC didn't disclose its pricing for the new bundles, saying that costs will vary widely depending on the configuration. **47339**

Microsoft Tightens Links Between Office, CRM Apps

BY MARC L. SONGINI

Microsoft Corp. in August plans to add features to its CRM software that are designed to offer users tighter integration with Office 2003.

The software vendor last week announced that it's developing an add-on feature pack for its Microsoft CRM 1.2 applications, which were released in December. Existing users will be able to install the new functionality without paying any additional license fees, according to Microsoft.

Microsoft is using its Office Information Bridge Framework, which is based on Web services technology, to in-

crease ties between the CRM applications and Office 2003. End users will be able to create and track sales letters and retrieve customer-related data in Office without having to switch back and forth between that software and Microsoft CRM, the company said.

"It's a way to have fewer clicks to get information," said Holly Holt, group product manager for Microsoft CRM within the vendor's Business Solutions unit. For instance, when a user is writing a letter to a customer, a separate window will pop up and provide data about previous dealings with the customer, Holt said.

Similarly, closer links between Microsoft CRM, Office and Microsoft's Windows SharePoint Services collaboration software should help speed the creation of sales proposals, she added.

There will also be changes to the client administration tools that help manage end-user privileges. IT staffers will be able to configure the system so users can access calendar information while working off-site but be restricted from saving customer data locally, Holt said. In addition, data synchronization can be staggered based on the type of information that's involved.

The feature pack will fix some basic shortcomings in the CRM software, but it's just a "baby step" for Microsoft, said Sheryl Kingstone, an ana-

lyst at The Yankee Group in Boston. Kingstone noted that she's awaiting better off-line performance with Microsoft's Outlook e-mail client as well as additional sales, service and marketing capabilities. "A big problem with Microsoft CRM has been performance and usability," she said. **47353**

MICROSOFT CRM

Other New Features

- Microsoft Mobile CRM 1.2, which will provide contact and sales-opportunity management tools for use on Pocket PC devices.
- A redeployment tool for migrating Microsoft CRM configurations and data among different installations, sites and application domains.

Offshore Threat Debated at Hearing on Network Security

Vendors put on defensive before House

BY GRANT GROSS
WASHINGTON

Offshore software development is one factor behind the escalation of exploitable network vulnerabilities, according to testimony at a hearing on network security before a U.S. House subcommittee last week.

Software companies must add more controls to the development process for software produced outside the U.S., said Steve Solomon, CEO of Citadel Security Software Inc. in Dallas.

"Software development organizations should be required to have all overseas-developed software examined for malicious capabilities embedded in the code," Solomon told the House Government Reform Committee's Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census. "Industry and government must work together to develop some form of standard or review process to address this growing threat."

Solomon's comments were rebutted by representatives from Microsoft Corp. and Juniper Networks Inc.

"It really doesn't matter where software is developed," said Dubhe Bienhorn, vice president of Juniper Federal Systems. "It is a process that requires very tight controls and very intense scrutiny."

Cheap Solution

Solomon defended his comments by pointing out that software vendors see offshore development as "easy and cheap."

"Maybe my colleagues on this panel have [secure offshore] processes in place," he added. "A lot of companies don't."

Subcommittee chairman

Rep. Adam Putnam (R-Fla.) focused some of his questions on the process of patching software after vulnerabilities are discovered. When Putnam asked whether the patching process and the alert process that accompanies it are working well, Scott Culp, senior security strategist at Microsoft, said he believes that software vendors are working hard to notify customers.

"We have a very active interest in making sure as many people as possible know about our mistakes and how to fix them," Culp said.

Asked by Putnam if he's satisfied with the patch and alert

process Microsoft now has in place, Culp responded that he's never satisfied. "I'd like to send out a lot fewer of those alerts," he said.

Putnam started the hearing by taking both private companies and government agencies to task for not moving fast enough to address continuing cybersecurity concerns. "As a nation, we have taken very dramatic steps to increase our physical security, but protecting our information networks has not progressed at the same pace, either in the public or in the private sector," Put-

nam said. "I remain concerned that we are collectively not moving fast enough to protect the American people and the U.S. economy from the very real threats that exist today.... The time for action is now."

False Sense of Security

Solomon also suggested that companies that rely on patch management services have "false security" and may be neglecting larger problems. For example, they may not have broad security policies or plans for recovery after attacks. "On average, only 30% of an organization's verified vulnerabilities relate to patching, leaving their networks exposed to the remaining 70% of the problem, which are more dangerous and easily exploited," he said. "These products do



PUTNAM chided the private sector and government for not addressing cybersecurity concerns fast enough.

not address the problem of full life-cycle vulnerability management and effectively become part of the problem."

Louis Rosenthal, executive vice president at ABN Amro Holding NV in Chicago, called on the subcommittee to find ways to encourage software vendors to accept responsibility for the role their products play in supporting U.S. critical infrastructure. He also asked the subcommittee to support a measure that would hold software vendors more accountable for the quality of their products and for continuing patch support for older but still viable versions of their software.

Incentives like tax breaks, cybersecurity insurance and lawsuit reform could encourage software companies to make more secure products, Rosenthal added. ☐ 47343

Gross writes for the IDG News Service.

Alcoa to Ship 70 IT Jobs to India

Positions currently outsourced in U.S.

BY JAIKUMAR VIJAYAN

Global aluminum giant Alcoa Inc. confirmed last week that it plans to outsource 130 jobs, including about 70 IT positions, to an India-based services provider as part of a move to reduce costs.

The jobs will move to India in phases over the next 18 months; the transition will result in the elimination of an equal number of positions from the Pittsburgh-based company's North American data center in Upper Burrell, Pa., and a business service center in the region.

A "vast majority" of the affected jobs are already outsourced and are currently being performed by a U.S.-based services provider, said Kevin Lowrey, a spokesman for the company. The only difference under the new arrangement is that the job will be handled by an offshore contractor

instead of a domestic one, Lowrey said. He declined to name the U.S.-based services provider.

The outsourced positions are in groups that deliver chargeback services to other businesses within Alcoa. Lowrey said. "They want to be as low cost and as effective as they can be," which is the reason for moving them offshore, he said. "We are a global company, and we will continue to source globally" where it makes sense, he added.

The affected jobs represent about 6% of Alcoa's workforce in the Pittsburgh metropolitan area. The \$21 billion company has about 120,000 employees worldwide.

The size of Alcoa's workforce has been declining since 2000, when it employed about 142,000 people. However the number of workers in the Pittsburgh area has been increasing, according to a researcher at the *Pittsburgh Business Times*, which tracks local employment statistics.

News of Alcoa's plans to ship jobs to India comes at a time when U.S. companies are increasingly reluctant to talk about their offshore moves because of the strong sentiment against the trend.

The growing lack of transparency is making it difficult to get a true handle on the level of offshore outsourcing that's taking place, said Marcus Courtney, president of the Washington Alliance of Technology Workers in Seattle.

Corporations are doing everything they can to keep their activities and the number of jobs being moved overseas from being publicized.

MARCUS COURTNEY, PRESIDENT, WASHINGTON ALLIANCE OF TECHNOLOGY WORKERS

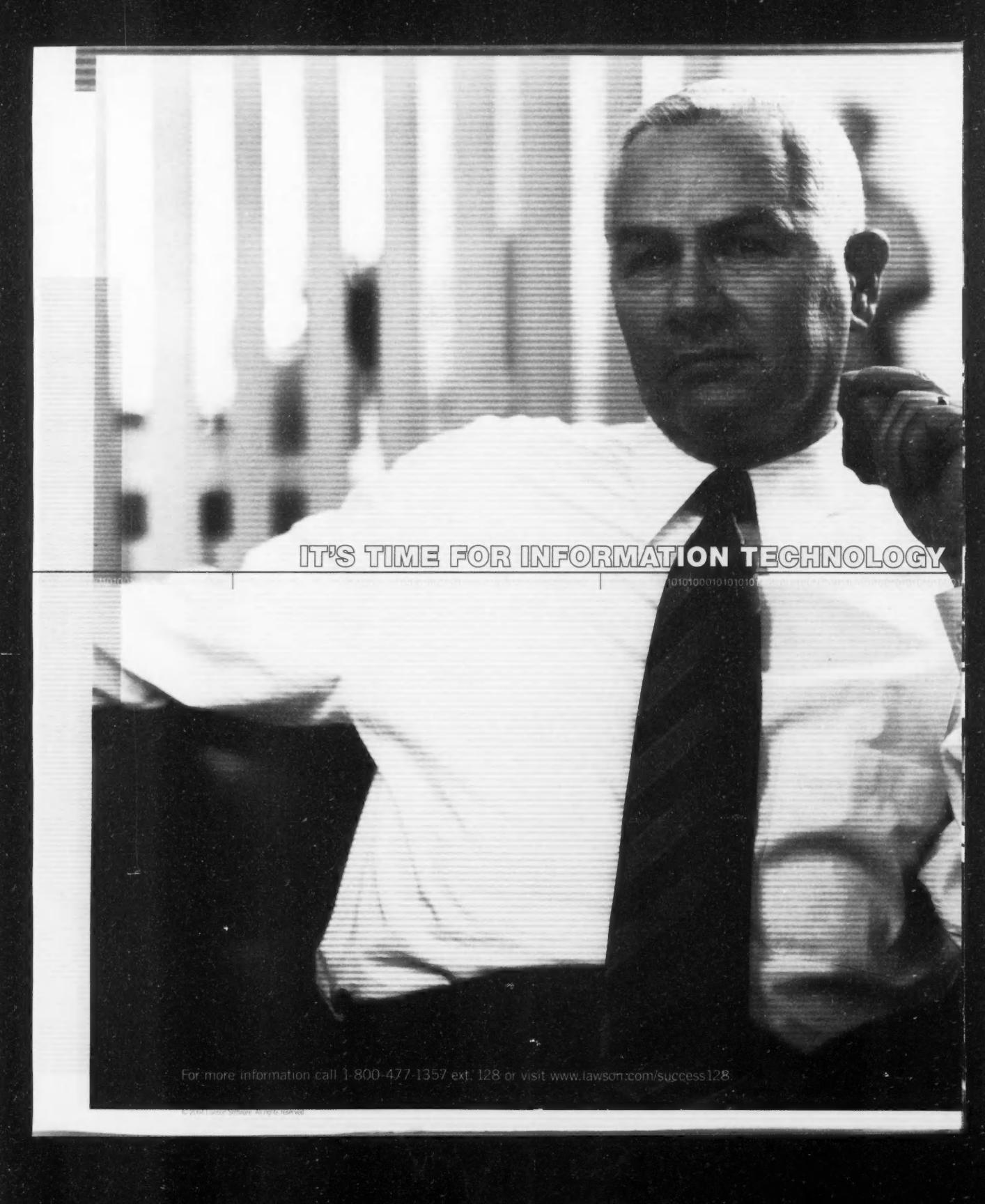
WashTech operates a Web site that tracks companies that have outsourced jobs to overseas locations. So far, the organization has compiled a list of 250 companies culled from media reports and insider tips.

"Corporations are doing everything they can to keep their activities and the number of jobs being moved overseas from being publicized," Courtney said.

It's also getting harder for companies to keep a lid on the information if they're inclined to do so, said Stan Lepeak, an analyst at Stamford, Conn.-based Meta Group Inc.

"There's definitely a trend away from the days when companies would tout such deals," Lepeak said. And it's becoming harder to get information on how many jobs are being outsourced or what the dollar value of such deals might be, he said.

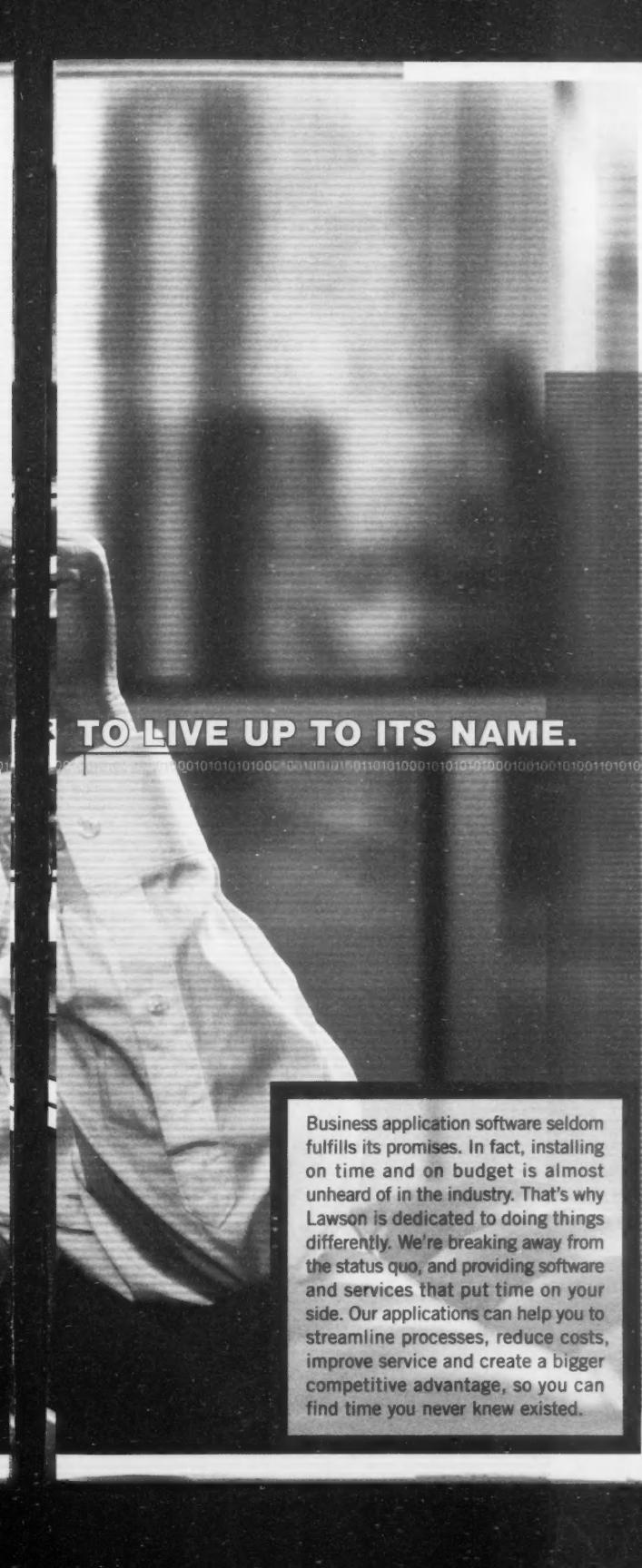
"But it's hard to keep it a secret," Lepeak said. Regulatory requirements, disgruntled workers or the presence of a labor union almost always ensure that word of such deals gets out, he said. ☐ 47340



IT'S TIME FOR INFORMATION TECHNOLOGY

For more information call 1-800-477-1357 ext. 128 or visit www.lawson.com/success128.

© 1996 Lawson Software. All rights reserved.



TO LIVE UP TO ITS NAME.

Business application software seldom fulfills its promises. In fact, installing on time and on budget is almost unheard of in the industry. That's why Lawson is dedicated to doing things differently. We're breaking away from the status quo, and providing software and services that put time on your side. Our applications can help you to streamline processes, reduce costs, improve service and create a bigger competitive advantage, so you can find time you never knew existed.



LAWSON

It's Time.

Continued from page 1

Solaris

Sun servers, including one with an Oracle Corp. database containing 50 million records. Verity said he opted for Solaris over Linux because it's strongly supported, secure and well maintained. Although Verity said using Linux is becoming less of a security concern, he plans to stick with Solaris.

Allowing developers to make contributions to source code is a good thing, said Verity. "We like to get at source code, because we think we can do more interesting things with it," he said.

'Open-Source' Solaris

The plan: Sun will likely use its Java Community Source license model for Solaris.

The reason: Overseas markets are resisting proprietary operating systems, and Sun may be hoping to slow movement to Linux on low-end systems.

The timing: Sun isn't saying, but Solaris 10 is due by the end of the year.

At Sun's announcement in Shanghai last week, Jonathan Schwartz, Sun's president and chief operating officer, said the company would "take the model that we used with Java" and extend it to Solaris. "Make no mistake, we will open-source Solaris," he said.

But open-source advocates maintain that the Java licensing scheme isn't a true open-source model because it still gives Sun control over the final product, said Eric Raymond, president of the non-profit Open Source Initiative. "We don't think we have grounds for optimism here," he said.

Jon Hall, executive director of Linux International, a vendor group based in Amherst, N.H., that promotes Linux use, said the fact that the announcement was made in Shanghai suggests that it was aimed at countries such as China that are pushing open-source over proprietary systems.

But analysts doubt it will have much impact on commercial users.

"I don't think that they will care whether or not Solaris is developed using an open-source model," said Perry Donham, an enterprise systems consultant at Collabor-

Sun Offers Subscription Plan for Storage

SUN last week said it will begin offering a subscription-based pricing model on its disk arrays that lets customers pay a monthly fee for use of the hardware plus storage management tools and ongoing technical support.

In addition, Sun announced its first disk array based on low-cost Serial ATA drives for secondary storage applications. The company also introduced a midrange array with enterprise-class features and said it plans to add a line of network-attached storage devices this fall through a reseller deal with Procom Technology Inc. in Irvine, Calif.

Sun's pay-as-you-go storage pricing initially is being offered on its high-end StorEdge 9980 array, although the company said it eventually plans to extend the approach

to other models. The monthly cost starts at \$1.95 per gigabyte for a three-year contract.

Companies that adopt the subscription-based pricing will pay only for the capacity they use, eliminating upfront storage costs. "This is not a capital expenditure for customers," said Adam Mendoza, director of strategic alliances for Sun's Network Storage Products Group. "This is intended to be an operational expense."

Sun also announced an upgrade of its policy-based file management software that adds dynamic data archiving capabilities plus a new graphical user interface and management wizards. Version 4.1 of the Storage Archive Manager-Quick File System (SAM-QFS) software can support up to 1 petabyte of data, four times more than

the current release supports.

Chris Peterson, vice president of IT at Earth Satellite Corp. in Rockville, Md., has been beta-testing the new release of SAM-QFS for two months, using it to store satellite images of the earth, which his company sells to NASA and other customers.

Each time a backup took place on his old system, the entire file system had to be scanned to determine whether a file had been archived, a process that could take minutes or even hours and eat up 100% of his server's CPU cycles.

"Now they've built intelligence into the file system itself, so whenever someone creates a new file, [the software] automatically places it into an archive list," Peterson said. "Then all we do is tell the archiver to archive what's been changed."

- Lucas Mearian

Continued from page 1

Kumar

strator at Guidant Corp. "I felt that with all the bad financial stuff going on on his watch, why is he still hanging around?"

Harzewski said that several years ago, she had felt pressured by CA salespeople to sign contracts on a certain date "with pressure from management above."

"We don't need the distractions of the accounting irregularities, so I think he should fall on his sword and get out of the way," echoed a longtime CA user who spoke on condition of anonymity. "He should start a club with former CIA director George Tenet."

Other users had less-critical comments.

"Companies using CA should be concerned about how all these management shifts affect products and support, but I don't see a big impact on the user level," said Carmen Huff, president of the North America Ingres User Association and lead database administrator at Alliance Data Systems Inc. in Dallas. "The excitement about open-source for Ingres and other products is not going to be diminished by what's happening with Sanjay."

Huff said she welcomes the investigations by the U.S. Securities and Exchange Commission and the U.S. Attorney's Office into CA's accounting practices. "Somebody high up has to watch what's happening at the top of these companies," Huff said. Government officials couldn't be reached at deadline on Friday to comment

on any possible actions involving CA or Kumar.

Chris Poole, president of the Florida CA Users Group and senior analyst at Convergys Corp. in Jacksonville, credited Kumar with "dramatically improving the quality of products when he took over as CEO." Specifically, he said, Kumar pulled CA workers off development of new products to produce a patch for its Unicenter line of management tools.

Richard Evans, senior vice president of Neways International Inc. in Springville, Utah, said he would have "loved to see Sanjay stay . . . because his knowledge of technology was outstanding and he was good in customer service."

Some analysts said Kumar's decision to leave CA may have been prompted by pending legal action by federal authori-

ties. "This is not good news for Sanjay personally," said Rich Ptak, an analyst at Ptak, Noel & Associates in Amherst, N.H. "There was no real reason for Sanjay to leave unless the government made it clear to management staff that he was going to be indicted."

CA Chairman Lewis Ranieri issued a statement Friday suggesting that Kumar's departure will help settle the government's investigation of CA.

"The [CA] board is committed to reaching a settlement of the government's investigation into the company's past accounting practices as quickly as possible," Ranieri said. "We are working hard to take the remedial steps necessary to put this entire matter behind us. Sanjay's decision to leave CA was made in that spirit."

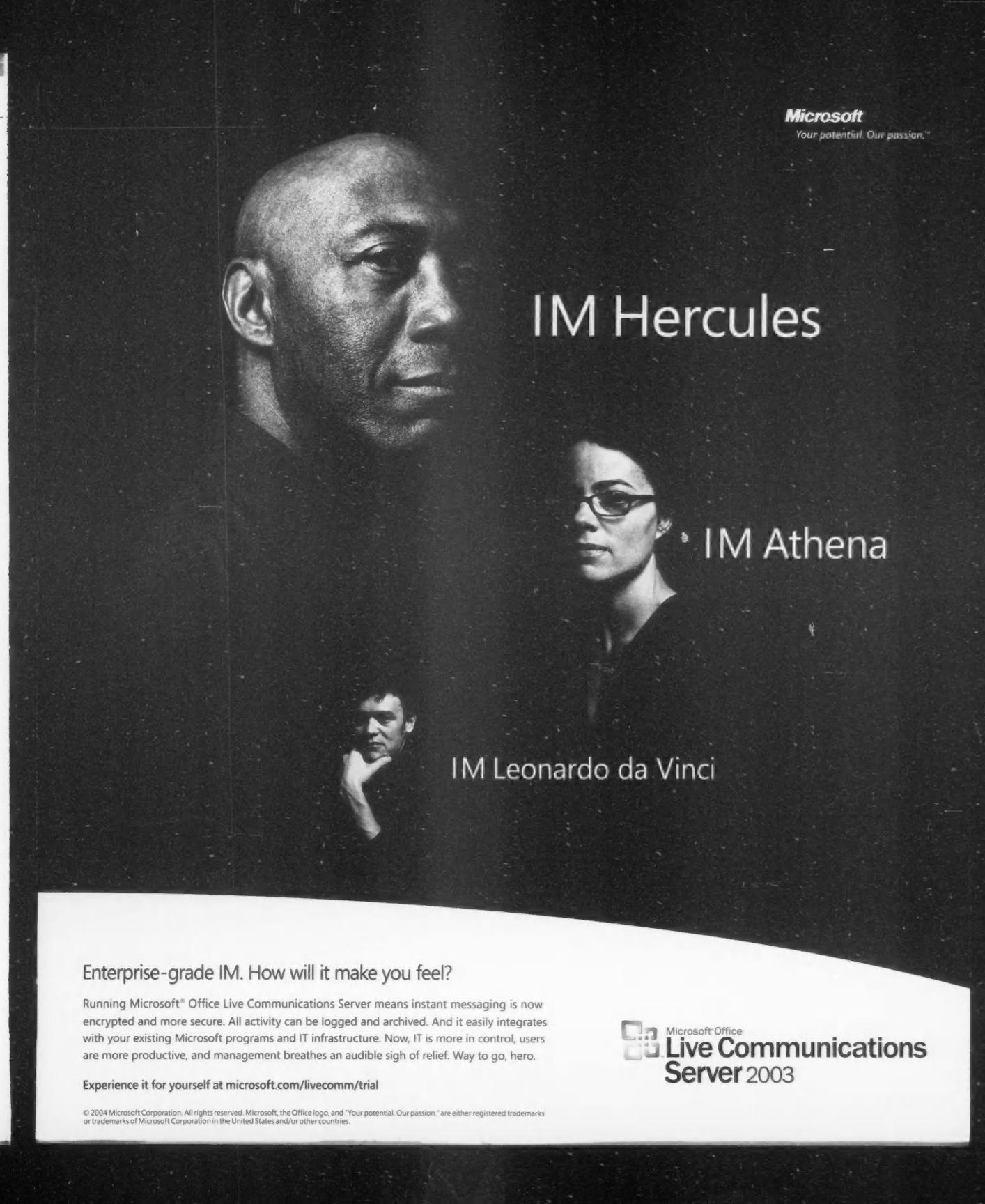
Company officials declined to comment beyond the statement. In April, Kumar had been ousted from his position as chairman and CEO and assumed the title of chief software architect.

"It has become increasingly clear to me in the past few days that my continued role at CA is not helping the company's efforts to move forward," Kumar said in the statement. "I understood that my stepping down as chairman and CEO represented a break with the past, but I have reluctantly concluded that as long as I hold any position, focus on past issues and my current role will continue." ☐ 47368

MORE ONLINE

For additional CA coverage, visit us online:

 QuickLink a1640
www.computerworld.com



Microsoft

Your potential. Our passion.™

IM Hercules

IM Athena

IM Leonardo da Vinci

Enterprise-grade IM. How will it make you feel?

Running Microsoft® Office Live Communications Server means instant messaging is now encrypted and more secure. All activity can be logged and archived. And it easily integrates with your existing Microsoft programs and IT infrastructure. Now, IT is more in control, users are more productive, and management breathes an audible sigh of relief. Way to go, hero.

Experience it for yourself at microsoft.com/livecomm/trial

© 2004 Microsoft Corporation. All rights reserved. Microsoft, the Office logo, and "Your potential. Our passion." are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.



Microsoft Office
**Live Communications
Server 2003**



Dillard's department stores found a real bargain.
Xerox assessed and streamlined their company-wide work
processes and printing needs, saving them \$1.6 million.
There's a new way to look at it.

Learn more: xerox.com/learn For a sales rep: 1-800-ASK-XEROX ext. LEARN

© 2004 XEROX CORPORATION. All rights reserved. XEROX® The Document Company™, DocuShare™, DocumentCentre™ and There's a new way to look at it are trademarks of XEROX CORPORATION. Dillard's is a registered trademark of Dillard's Inc.

THE DOCUMENT COMPANY

XEROX

Start-up Finalizes Suite Of IT Management Apps

ITM adds module that supports IT governance, regulatory compliance

BY THOMAS HOFFMAN

Start-up vendor ITM Software Corp. has completed the development of an integrated suite of IT management applications that early users and analysts said is something akin to an ERP system for CIOs.

The ITM Business Suite is a set of five software modules designed to help IT executives manage vendor relationships, project portfolios and the process of aligning internal IT skills with business needs. Last month, the Mountain View, Calif.-based company added an IT governance and regulatory compliance application and formally announced the entire suite.

The ITM Governance and Compliance Management module can be used to document corporate IT processes and ensure that they aid efforts to comply with the Sarbanes-Oxley Act and other regulations, the company said (see box). The software supports the use of standard governance models, such as the IT Infrastructure Library and the Control Objectives for Information and Related Technology, or CobiT.

Dennis Gaughan, an analyst at AMR Research Inc. in Boston, said software for managing IT governance activities and portfolios of technology projects is available from several other vendors, including Changepoint Corp., Mercury Interactive Corp. and Niku Corp.

Soliciting Feedback

But over the past 18 months, ITM has solicited detailed feedback from more than 150 CIOs on functionality they'd like to see in its suite, Gaughan added.

"ITM does a better job of customer partnering than any vendor I've ever worked with," said Madeleine Fackler, vice president of information manage-

ment and CIO at LifeScan Inc., a Milpitas, Calif.-based subsidiary of Johnson & Johnson that makes blood-glucose monitoring systems. "Other software companies have asked me for my feedback, but not with the level of discussion that they had."

ITM began beta-testing its technology in late 2002, and LifeScan installed the vendor's base module early last year. This month, it plans to start deploying the vendor relationship management application, Fackler said.

The software will run on a Linux-based application server that's equipped with BEA Systems Inc.'s WebLogic middleware and connects to a report server running Windows

2000. Fackler said she plans to evaluate the IT governance application after the rollout of the vendor relationship module.

Kevin Kryzda, CIO for the government of Martin County, Florida, said his IT department is deploying ITM's project portfolio module and expects to start running the software on either Sun Solaris or Red Hat Linux this month.

Martin County, which is on the Atlantic coast about halfway between Miami and Orlando, began restructuring its IT department

three years ago. In doing so, "we wanted to make sure we were measuring how effectively we were meeting business objectives," Kryzda said. ITM's software should help support that goal, he added.

For IT departments with 50 to 100 workers, ITM's pricing starts at about \$100,000 for the base module and one application. The software supports Oracle databases and can run on Windows, Linux and Solaris operating systems. **47303**

MORE NEWS ONLINE

A Meta Group Inc. survey finds that less than 20% of large companies have formal governance committees:

QuickLink 47304
www.computerworld.com



Dillard's department stores hire over 10,000 people a year. Storing and retrieving application, training and benefits packets had become costly. So Dillard's bought into something smart: a Xerox Office Document Assessment (ODA).

Xerox examined their work process across all 14 Dillard's business units and recommended key improvements.

First, all analog copiers, stand-alone printers and fax machines were replaced by Xerox DocumentCentre® multifunction systems. Then Xerox DocuShare® was installed on Dillard's network.

This cross-platform document system, along with Xerox imaging software, digitized key business processes.

Now, instead of storing and distributing hard copy documents with each new hire, store managers go online for hiring packets and print forms on the spot. No paper inventory. No outdated information. \$1.6 million saved. To see what you can save, call us or visit our website.

Learn more: xerox.com/learn
For a sales rep: 1-800-ASK-XEROX ext. LEARN

THE DOCUMENT COMPANY

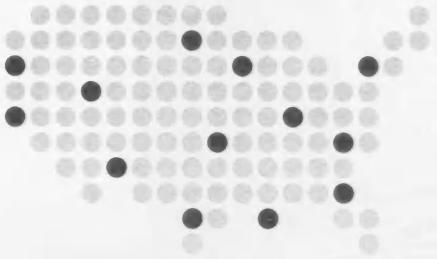
XEROX

The SBC logo and GOING BEYOND THE CALL are registered trademarks of SBC Knowledge Ventures, L.P. ©2004 SBC Knowledge Ventures, L.P. All rights reserved.

CONSIDER YOUR NATIONAL RETAIL NETWORK. Consider the dots connected.

Now we can design, deliver and manage a data integration system that brings it all together. Converge every kind of business network - dealers, brokers, suppliers, customers - across platforms, across America. All on the strong, reliable backbone of the SBC network. To connect the dots coast to coast, talk to your SBC account representative. sbc.com/dots

GOING BEYOND THE CALL®



Sony Pulls Plug on PDAs Outside Japan

BY TOM KRAZIT

In another sign that conventional handheld devices have lost the cachet they once en-

joyed with users, Sony Corp. last week said that it won't add any new models to its Clie product line outside of Japan

for at least the rest of this year.

Sony said in a statement that it still views mobile devices as a key component of its busi-

ness strategy. But for now, the Tokyo-based company added, it "is reassessing the direction of the conventional PDA market" and focusing Clie product development and sales on the Japanese market only.

Sony shipped just over 100,000 Clie units in the U.S. during the first quarter, good enough for third place among handheld vendors, according to market research firm IDC. The U.S. sales accounted for nearly half of Sony's overall shipments during the quarter. But IDC said worldwide Clie sales plunged 50% from the same quarter a year earlier, far exceeding an industrywide decline of 12%.

Users of handheld devices are increasingly looking to buy mobile phones and converged smart phone devices, said IDC analyst Alex Slawsby. Voice support is quickly becoming essential, he added.

Sony has already mapped out a mobile phone strategy through its Sony Ericsson Mobile Communications AB joint venture, and Slawsby said there's little evidence of collaboration between the Sony Ericsson and Clie teams. He noted that Sony Ericsson has made a strong commitment to the Symbian operating system, and Clie is the highest-profile product line based on the rival Palm OS technology outside of PalmOne Inc.'s devices.

Flooding the Market

Over a three-year period, Sony released about 30 Clie models in the U.S. market, said Todd Kort, an analyst at Gartner Inc. The plethora of new models alienated some users who didn't want to buy a handheld when a new one would be arriving soon, he added.

Kort said that even though Sony's share of the worldwide PDA market fell to 8% in the first quarter, its withdrawal from the U.S. market could substantially affect Palm OS developer PalmSource Inc.

PalmSource now will get about 90% of its operating system business from Milpitas, Calif.-based PalmOne, according to Kort. Just eight months after the two companies separated in a strategy designed to foster independence, "almost, in effect, they're back together again," he said. **C 47305**

Learn from the best in the business: our customers

**5 of the top 6
global automotive companies**

**10 of the top 15
Forbes retail companies**

**11 of the top 12
industrial OEMs**

**10 of the world's largest
brand names in the
consumer goods industry**

... use our solutions



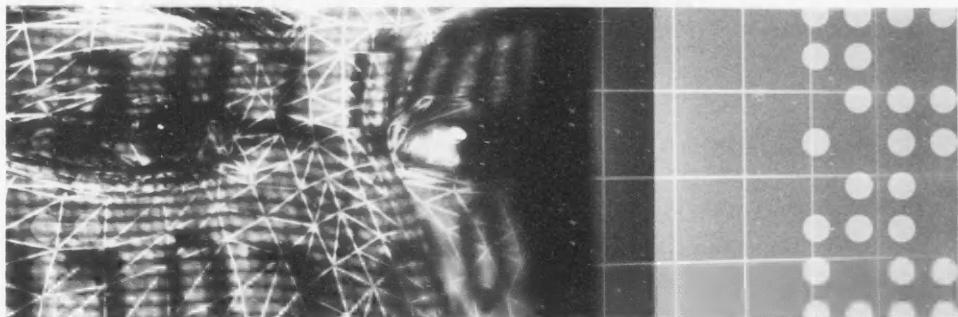
i2 has 15 years of expertise
in supply chain and we
continue to learn from
the best in the business...
our customers.

i2 solutions can help you intelligently shape and respond to customer demand to match available supply — closing the loop between planning and execution. Many leading companies have been able to control costs, reduce inventory, increase throughput, and boost profit margins using i2 solutions.

Make a difference in your business performance with a complimentary supply chain improvement workshop. Visit www.i2.com or call 1-877-926-9286 to learn more.

Krazit is a reporter for the IDG News Service.

ROBUST OBJECTS AND ROBUST SQL



ONLY ONE DBMS GIVES YOU BOTH

For your next generation of applications, move to the next generation of database technology.

Caché is the *post-relational* database that combines high-performance SQL for faster queries and an advanced object database for rapidly storing and accessing objects. With Caché, no mapping is required between object and relational views of data. That means huge savings in both development and processing time.

Applications built on Caché are massively scalable and lightning-fast. Plus, they require minimal or no database administration.

More than just a database system, Caché incorporates a powerful Web application development

environment that dramatically reduces the time to build and modify applications.

The reliability of Caché is proven every day in “life-or-death” applications at thousands of the world’s largest hospitals. Caché is so reliable, it’s the leading database in healthcare – and it powers enterprise applications in financial services, government and many other sectors.

We are InterSystems, a specialist in data management technology for twenty-five years. We provide 24x7 support to four million users in 88 countries. Caché is available for Windows, OpenVMS, Linux and major UNIX platforms – and it is deployed on systems ranging from two to over 10,000 simultaneous users.



Try a better database. For free.

Download a free, fully-functional, non-expiring version of Caché or request it on CD at www.InterSystems.com/robust

© 2001 InterSystems Corporation. All rights reserved. InterSystems Cache is a registered trademark of InterSystems Corporation. T-01

Profiles in Business

Every business is a team of individuals. And if you can maximize teamwork, you'll maximize productivity—which is where Nokia comes in. Everything we make, from advanced messaging devices to secure mobile connectivity offerings, is engineered to give your team the power to work faster and smarter. The payoff can be immediate:



The Nokia 6820 Messenger

the power to work faster and smarter. The payoff can be better decision-making,



Torturous Trevor the Technoholic

Mr. "I Have Security Issues"

*R.O. Ida, The Chief
Financial Officer*

Working-from-Home Walter

Mobility: Teamwork

*1

How to be more competitive, more productive, and, uh, more in sync.

improved coordination, faster growth. And because Nokia
supports a variety of access methods and devices, your people can work on their
own terms while taking care of business demands. Learn more today. And give your
team—and your business—the advantage of more mobility. Anytime, anywhere,

and on virtually any device.

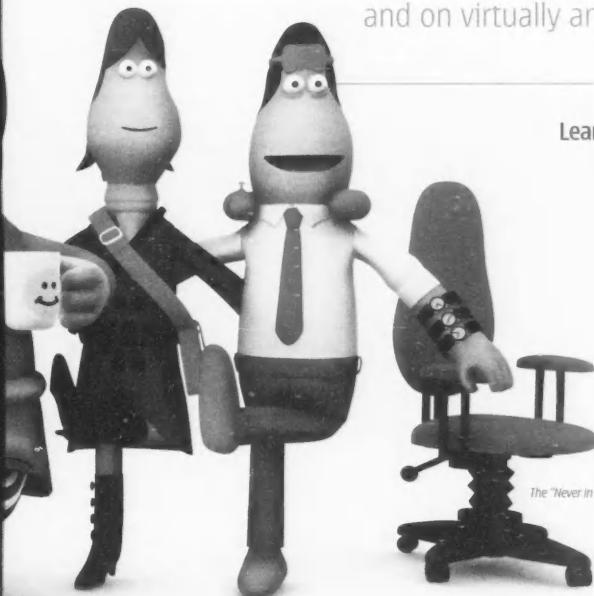


Nokia security appliance



Nokia One Business Server

Learn how to mobilize your team and increase business productivity. Download "The Anytime, Anyplace World" white paper at >>nokiaforbusiness.com



Metro Mel

Time Zone Tim

The "Never in the Office" Girl

NOKIA
CONNECTING PEOPLE

MARYFRAN JOHNSON

Defending Boundaries

TWO WEEKS AGO in this column, I asked if you noticed — or cared about — the blurring of boundaries between editorial content and advertising. The question followed my apology for a

mistake we made in our May 24 issue, where we inadvertently placed an advertisement for Nick Carr's *Does IT Matter?* next to an excerpt from his book and an interview with the author. (You can read my editorial at QuickLink 47014.)

One reader summed up the whole problem perfectly: "Advertising should be kept at a distance from anything that represents the opinions of the media publishers. Otherwise it presents the appearance of impropriety, even if there is none."

The ads were part of a barter deal our events division struck with Carr and his publisher last spring. In place of his customary speaking fee for appearing at the Computerworld Premier 100 IT Leaders conference, we agreed to run some ads for his upcoming book. But the unfortunate placement of the ad made it look as though we were actively participating in the PR campaign for the book (we aren't), or that we'd agreed to help publicize it in hope of additional advertising revenue (we hadn't).

To my great relief, many of you not only noticed, but you cared quite a bit. (See three of your letters on the opposite page.) But the concerns I heard expressed went beyond the importance of maintaining a clear separation of editorial content from advertising in print. They also encompassed the escalating invasion of ads into online content.

"The technologies available on the Web create an entirely new set of advertising capabilities and journalistic conflicts that mostly go unreported (or underreported)," wrote one secu-



MARYFRAN JOHNSON is managing editor of Computerworld. You can contact her at maryfran.johnson@computerworld.com.

rity expert. "Bang this drum often and loud."

Another, more cynical reader observed: "Reader trust in print is continuing to wane. The battle for online integrity has been lost."

I hope that isn't true. But there's no denying the fact that the online world has established distinctly different (and uncomfortably cozy) editorial/advertising adjacency standards. Online ads are sold by matching desired keywords with related content, making sure that an ad about storage, for example, will pop up near stories about storage. And the latest technology developments in online "contextual" advertising now let an advertising link be embedded inside the actual story.

To Brian Milum of Marietta, Ga., that invasion is bad news, and it's bound to backfire. "I think hypertext

links that lead to advertisements do an even greater disservice to the reader, the advertiser and the Web page authors," Milum wrote. "When I click a hyperlink (no matter what color it is), I expect to be taken to a page that provides additional information about the highlighted item — not to an advertisement."

A few readers, like Hank Wieland, marketing services vice president for the Telecommunications Industry Association, wondered how we would prevent a similar adjacency mistake from happening again, and whether *Computerworld* has any rules of conduct in place to ensure journalistic integrity. We changed the adjacency process to involve a third person scrutinizing editorial and ad placement, and we have also posted our longstanding editorial code of ethics online [QuickLink a4620]. Among other things, those 10 principles state that we must be committed to our readers, that our reporting must be fair and unbiased and that we must correct errors promptly and completely.

But of all those principles, the one that matters most is: "Editorial decisions are made free of advertisers' influence." I'm grateful that you're right behind us on that one. ☐ 47316



PIMM FOX

The Security Privilege

I RECENTLY CAUGHT Tom Cruise in *Mission: Impossible* on TV and marveled at the movie's use of IT. Tom's team of experts can break into government databases, launch probes of the Internet and find the proverbial digital needle in a haystack.

While Hollywood is great at setting the standard for IT imagination, the reality is more prosaic. That's why I'm not afraid of the U.S. government's plan to spend \$15 billion on a new whiz-bang network of databases to track foreign visitors. At least not afraid it will work.

There are more than 300 land, sea and air border-crossing points in the U.S., and the government is swamped trying to screen for terrorists.

The plan, dubbed US-VISIT, is to create virtual borders so that the more than 300 million annual visitors to the U.S. will be checked before they even get to the land of amber waves of grain. Once in the U.S., visitors could be monitored or at least checked against a giant database that would have links to local law enforcement, banking and educational systems.

Part of the plan to link 20 federal databases includes real-time authentication. This would possibly entail the use of photographs, fingerprints, iris-scanning and facial-recognition technology, and radio frequency chips embedded in passports.

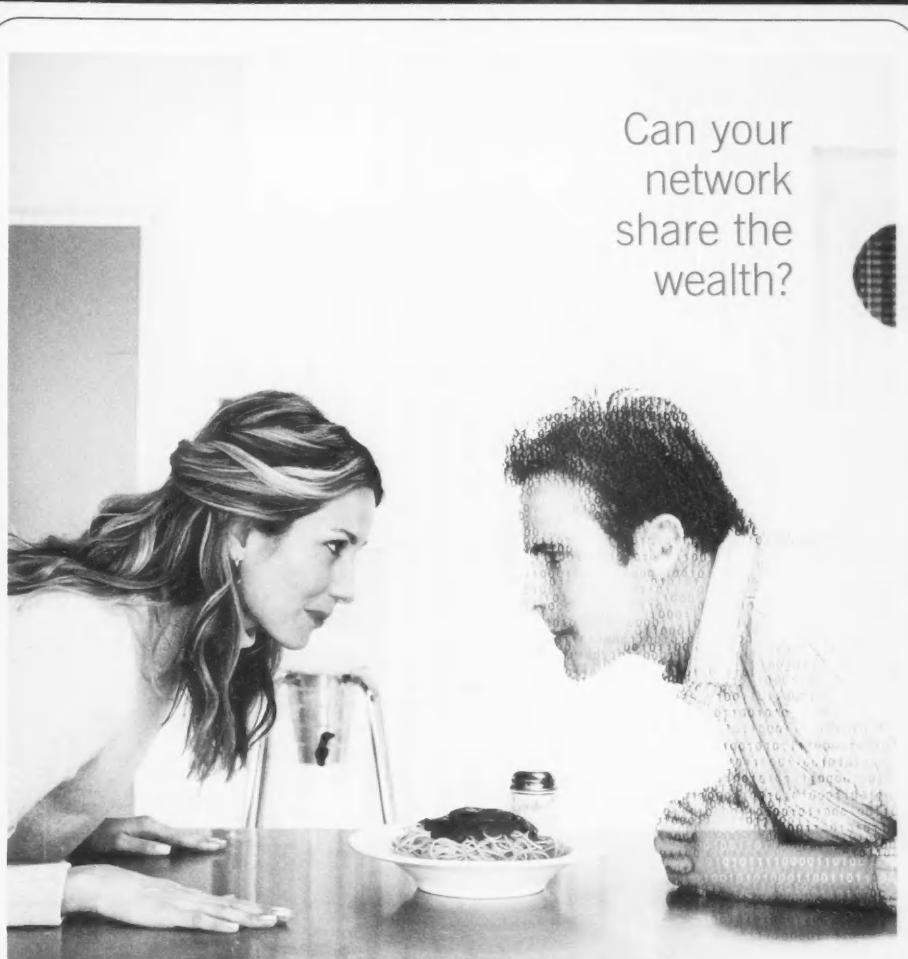
To privacy advocates, this all sounds like a George Orwell nightmare. And certainly no one wants the U.S. government to use personal information for nefarious activities.

I don't think we need to worry.

The government already has tons of data it can use against individuals — everything from old, unpaid parking tickets to long-overdue student loans. (As Raymond Chandler said, "Everybody has something to conceal.") But it doesn't use the information.



PIMM FOX is a London-based journalist. Contact him at pimmfox@pachell.net.



Can your
network
share the
wealth?

AT&T VIRTUAL PRIVATE NETWORKS. Can your network play well with others? Can it share information with customers across the country? Or communicate with employees across the globe? AT&T designs, implements and manages Virtual Private Networks that make it easy to share all your business-critical applications over the Internet. They even allow you to evolve your networks at your own pace, while delivering reliable, consistent and, most importantly, secure performance. So your door will always be open for the people you do business with. And slammed shut for the ones you don't. **CAN YOUR NETWORK DO THIS?**



The world's networking companySM

For a network that can, call 1-888-889-0234

att.com/networking

©1998 AT&T

Business players are scattered across the globe and AT&T is uniquely positioned to offer the most comprehensive set of network- and premises-based Virtual Private Network (VPN) solutions to help keep your clients, suppliers, business partners and remote workers connected. Now that's bringing the world of business together.

AT&T's VPN Portfolio includes:

- Global implementations that help your business expand.
- Network resiliency with class of service capabilities supported by industry-leading service level agreements (SLAs).
- Leading-edge network architectures for united connections with a variety of access options available.
- Secured networking with privacy, encryption and authentication capabilities.
- Management continuum ranging from a customer-managed to an AT&T managed solution, including proactive network monitoring and management.

AT&T's network keeps your players in the game no matter where they are

AT&T VPN Portfolio offers a comprehensive suite of global network- and premises-based implementations that range from individual components to tailored end-to-end solutions supporting the advanced application needs of today's enterprises – extending to critical members of your SCM, CRM and ERP business models.

AT&T Network-based VPNs utilize Multiprotocol Label Switching (MPLS), an advanced IP routing technology, to provide globally consistent networking environments designed to provide the flexibility of distributed communications with traffic prioritization through classes of service.

AT&T Premises-based VPNs are delivered by adding intelligent devices to the customer premises over either the AT&T Global IP Network, for users requiring a high performing network, or the Internet, for users requiring ubiquitous access with extended reach. AT&T offers multiple tunneling options, including IP Security (IPSec) and Secure Sockets Layer (SSL), allowing you to tailor your premises-based solution to meet your networking requirements.

INDUSTRY ANALYSTS ARE SAYING:

- "Customers feel safe with AT&T. That is a very rare accolade indeed, given the trauma of operating in the global telecoms environment in recent times." — Janet Watkin, Telemark Consulting UK
- In a recent Telemark Consulting UK poll, AT&T's IP VPN Services were rated, "Excellent" by network managers worldwide.
- According to Forrester Research, AT&T is the best in the VPN business with a future-proof global VPN architecture. — Choosing The Right VPN, Forrester Research, Inc., March 2003
- IDC Rated AT&T top of all U.S. IP VPN managed carriers for market share and market leadership.

For more information, contact your AT&T Representative, or visit www.att.com/networking.



But privacy advocates haven't considered the possibility that convenience will win out. At Amsterdam's Schiphol Airport, fast-track security lanes that use iris-scanning technology are already in operation.

Called Privium, this membership-only program is restricted to European Union passport holders. There are two types of membership. Privium Basic costs about \$125 per year for the luxury of speeding through security lines. The \$145 Privium Plus offers you separate check-in facilities for your flight as well as priority parking.

The application process is online. And, intriguingly, you can link your frequent-flier numbers to Privium.

So here's a suggestion for Accenture, which last week beat out Computer Sciences and Lockheed Martin in the bidding for the contract to build US-VISIT. It should include free transportation, free parking and extra frequent-flier miles. Every visitor who agrees to submit to an iris scan or some other sophisticated biometric test should receive a travel voucher for a free trip to the city center.

This program would do two things: It would segregate, without racial or ethnic profiling, those unwilling to join the program, and it would reduce congestion at border entry points.

And as for the frequent-flier miles, at least we know that those database programs seem to work. ☐ 47220

DAN GILLMOR

A World Without Secrets

AS THE investigations continue into the abuse of Iraqi prisoners in Abu Ghraib prison, at least one thing is clear: The incidents might never have come to the public's attention had it not been for the digital photographs taken by soldiers.

Something else is clear, and it affects all large organizations: Keeping some kinds of secrets is becoming much more difficult.

In the Iraq prison case, if the military and the Bush administration had wanted to keep this abuse covered up, it wasn't possible. Once the photos had been taken and started to make their way from one soldier's computer to another, their wider distribution was almost inevitable.

The phenomenon isn't just about cameras, though images plainly are more powerful than mere text. Weblogs, Internet chat rooms and message boards have become a means by which anyone can disseminate just about any kind of information. By adding photos, that information would be far more compelling.

As gadgets get ever smaller and more powerful, the secondary effects of this trend will grow in scale and implications. Traditional responses will fail.

Some organizations have tried banning camera phones in certain situations. Health clubs are banning them to prevent locker room pictures from making their way onto the Internet. In July 2003, Samsung, the giant Korean manufacturer, banned the use of camera phones in its factories, fearing the escape of trade secrets. Unquestionably, there's more of this to come.



DAN GILLMOR is technology columnist at the San Jose Mercury News. Contact him at dggillmor@mercury.com

But we're rapidly approaching a time when cameras will be essentially undetectable. They'll be part of our clothing, our eyeglasses or other garb, if we choose to make them so. Eventually, cameras will be as small as particles of dust, and they'll contain radios that can send what they see (and hear) to computers nearby, and then to who knows where.

Science fiction author David Brin envisioned this kind of thing years ago. His prescription was transparency on both sides — a world where citizens could spy on governments as they spy on us, for example. We might someday reach a détente of sorts, granting ourselves zones of privacy.

That world, I hope, is a long way off. Sometimes governments must keep secrets. But they tend to reserve the right to keep everything secret while simultaneously reserving the right to spy on everything we do. The balance is

beginning to shift, to a degree, though, as the Iraq prison pictures showed.

If people will be asked by their bosses to prevent the escape of information. They'll be tempted to use measures such as digital-rights management for documents, in an attempt to keep vital data from getting to competitors. And I expect to see wider bans on the use of mobile phone cameras in the relatively near future, however futile that might be.

My advice is to lighten up on the small stuff. Companies should be more transparent in their workings to begin with. When they tell their customers, employees and even competitors what they're doing, they're doing more to enhance communications than to create competitive problems.

I don't have a magic answer here. But trying to contain it all strikes me as futile. It's scary, but it's reality.

© 47237

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site: www.computerworld.com/columns

READERS' LETTERS

Crossing the Line

THANKS TO Maryfran Johnson for her editorial on advertising/editorial boundaries [“Blurring Boundaries,” QuickLink 47014]. I agree that they should be as separate as possible. I had read the book excerpt “Follow, Don’t Lead,” and when I noticed the ad for the same book on the opposite page, my heart sank.

I enjoy reading *Computerworld*'s articles. Its authors are well-informed, and the writing is as interesting and pertinent as it is concise. I thought I had finally found a quality source of news for the IT industry. But the positioning of that ad led me to doubt. There’s just so much dubious information out there, one can’t help but become skeptical. It’s a relief to know that it was a goof.

Jeremiah Fletcher

Senior systems analyst, Tufts-New England Medical Center, Boston, online@jeremiahfletcher.com

THANKS FOR the candid apology regarding the poor positioning of that book ad. When I saw the feature and adjacent ad, I had several thoughts, all negative. First, I felt it

was a crass sale of an ad’s position and wondered how much extra the book publisher paid. Then I wondered if the ad purchase helped generate the author interview and book excerpt. Last, I concluded that your publication had lowered its standards on such matters just to make more money. Now, having read your mea culpa, I feel much better, since accidents do happen, despite the best processes. But how about a follow-up column or feature article about the rules and procedures in place to ensure journalistic objectivity? The *Computerworld* brand is high quality, and that’s a key reason I have had a paid subscription for many years. Your editorial restored my shaken faith, but I would like to read more about your efforts to prevent future problems.

Hank Wieland

Vice president, marketing services, Telecommunications Industry Association, Arlington, Va., hwieland@tiaonline.org

TO ANSWER the questions Maryfran Johnson poses in her “Blurring Boundaries” editorial of May 24, I do care. I immediately noticed the juxtaposition of the ad for

Nick Carr’s book facing an article on the same topic and quickly turned the page in embarrassment, leaving both article and ad unread. No, I don’t think you’re tilting at windmills. However, I also don’t think it’s much of an issue in print (yet), because the old rules still hold – it’s still very easy to distinguish between information and advertising, and if I am confronted too many times by crass commercialism, I simply stop reading that publication. I view online advertising as being more along the lines of the television infomercial, and I similarly change the channel as quickly as I can. Thank you for the apology – I was worried for a minute that I was the only person offended by that placement.

Cathy Taddei

Portland, Oregon

Wireless Worries

MARK HALL’S column “Still Worried About Wireless” [QuickLink 46026] made a valid point about security in the home office. Case in point: Two of my neighbors are key IT personnel for two of the largest banks in the nation. Both work from home and use an unsecured wireless broadband device to

connect to their offices. This device provides access (DHCP-enabled) to anyone within 150 feet of their house and requires no security key. When I questioned them, I learned that they were unaware that anyone could connect to their network from the street. I offered to help them enable security on their device, but they declined. They are still broadcasting IP addresses. I am thankful that I don’t bank with their employers, since security seems a low priority. OK, maybe it is only these two employees, but that would probably be wishful thinking.

John Bumgarner

Security consultant, Cyber Watch Inc., Charlotte, N.C.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 971, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

For more letters on these and other topics, go to www.computerworld.com/letters

KVMs

perfected!

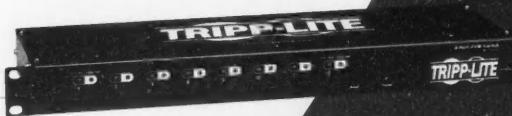
**Control More Computers for Less Money, in Less Space and in Less Time
with Tripp Lite KVM Switches**

Tripp Lite KVM Switches offer the most economical and convenient solutions available for controlling up to 512 PCs or servers with a single keyboard/video/mouse console. Save money, space and time by eliminating unnecessary consoles, removing cable clutter and avoiding the need to move between multiple consoles.



16-Port 1U Rackmount

- All-in-one console KVM switch includes a keyboard, 15" LCD screen, touch pad and 16-port KVM switch in an easy-glide 1U rack drawer
- Built-in on-screen display gives you control over all ports
- Daisy-chain capability and two-level password security
- 2 models available (one features integrated console KVM switch as shown)



8-Port 1U Rackmount

- Slim 1U cabinet design with daisy-chain capability
- On-screen display gives you control over all ports

4-Port Desktop

- Compact desktop design with individual port selection button
- Notebook and wireless-ready

2-Port Desktop

- Compact desktop design with individual port selection button
- Notebook and wireless-ready
- Includes 2 cable kits

**For more information on Tripp Lite KVM switches,
or to locate a reseller-partner,**

visit Tripp Lite's website:

<http://www.tripplite.com>

Resellers: For special demo unit pricing, call Matt Mulac at 773-869-1091.

**Tripp Lite
KVM Switches—
The Perfect Toy for
Control Freaks!**

TRIPP-LITE



www.tripplite.com
1111 W. 35th Street
Chicago, IL 60609
(773) 869-1234

COMPUTERWORLD HONORS 2004

06.07.04



Redesigned Database Improves Traffic Safety

Representatives from three Michigan state agencies helped redesign a traffic accident database to help save lives, improve highway design and reduce costs. [Page 33](#)



Handhelds Help Refineries Quickly Spot Problems

Bill Johnson at Lyondell-Citgo Refining is using IntelTrac handheld devices to move the refinery from paper-based systems to computerized workflow management. [Page 36](#)

THE DEPOSITORY TRUST & CLEARING CORP.

Data Replication Scheme Pushes Recovery Distances

BY LUCAS MEARIAN

George Perretti had received a lot of praise for the business continuity and disaster recovery infrastructure he helped build six years ago for The Depository Trust & Clearing Corp., which is responsible for

Continued on page 32



DTCC's George Perretti moved his business continuity infrastructure more than 1,000 miles away, well ahead of financial industry recommendations.

IT Heroes Think Big

Not satisfied with the status quo, these **Computerworld Honors finalists** demanded more from technology. With a vision of the future — and hard work — they found new ways to cut waste, advance their industries and, in some cases, save lives.

About the Program

THE 56 FINALISTS, from 10 countries, represent the most innovative and visionary applications of information technology from the 2004 Computerworld Honors collection. Finalists were selected by a panel of distinguished judges based on benefit to society, impor-

tance of IT, originality, success and difficulty.

Finalists in each of the 10 categories are being honored today at Washington's historic National Building Museum.

This year's full collection of finalists and laureates in-

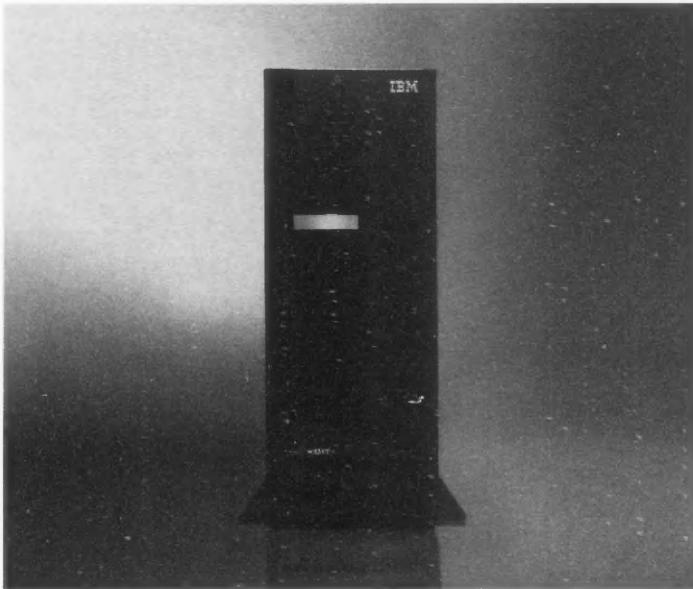
cludes technology applications from 33 states and 26 countries. Case studies will be posted online at www.cwheroes.org, where the entire collection is available to scholars, researchers and the general public worldwide.

TIDY
UP.

Meet the IBM eServer™ i5 system — designed to simplify your infrastructure. It's the first IBM server with POWER5™ technology. And the latest member of the IBM eServer iSeries™ family. What's more, it can simultaneously run four operating systems, dynamically allocating resources needed for each application and operating system.¹ On demand. iSeries technology can also help reduce the number of servers you manage by as much as 85%. We invite you to learn more about how to make your business more efficient. Just visit ibm.com/eserver/consolidate

5 reasons why IBM eServer i5 systems with Power Architecture™ technology can simplify your infrastructure.

<i>Runs four operating systems simultaneously.</i>	<i>Advanced virtualization technologies.</i>	<i>Capacity on demand.</i>	<i>POWER5 processor-based 64-bit technology.</i>	<i>Integrated for easy management.</i>
--	--	----------------------------	--	--



IBM
®

eserver®

The IBM eServer i5 system.
Consolidate. Integrate. Celebrate.

¹iXA or iXS required to run Windows. Customers must license O/Ss separately. IBM, the e-business logo, eServer, the eServer logo, iSeries, Power Architecture and POWER5 are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Windows is a trademark of Microsoft Corporation in the United States, other countries, or both. Other company, product and service names may be trademarks or service marks of others. ©2004 IBM Corporation. All rights reserved.

finalists

BUSINESS & RELATED SERVICES

- **Accenture Ltd.** - Overseas U.S. citizens cast votes with confidence from any Internet capable PC, doubling the number that can participate in elections.
- **BizRate.com** - The world's largest independent shopping search engine provides 1 million users each day with prices, availability and consumer ratings.
- **Equifax Inc.** - Automated monitoring and reporting of credit files alerts consumers to transactions that may be the result of identity theft.
- **Exostar LLC** - End-to-end encryption assures that only two users - the sender and intended recipient - can read Internet-delivered documents (see story, this page).
- **Foundstone Inc.** - A vulnerability management system scans systems and Internet addresses, keeping the University of California, Irvine's computing network available to students and staff.

EDUCATION & ACADEMIA

- **Case Western Reserve University** - The world's fastest metropolitan network provides Gigabit connectivity to all of Cleveland's nonprofit institutions and paves the way for the first-ever citywide Wi-Fi access.
- **Harvard Medical School** - Students access an entire medical school curriculum online with wireless devices, moving easily from classroom to library to home.
- **MIT and Sapient Corp.** - The materials used in the teaching of virtually all university and graduate subjects are made available without charge on the Internet, promoting the university's mission.
- **Perkins School for the Blind** - A vast library of Braille and unabridged recorded books, together with large-print versions, serves users who can't read traditional type.
- **University of Michigan** - Collaboratively developed, community-oriented digital resources and multimedia initiatives celebrate multiculturalism and diversity.

ENVIRONMENT, ENERGY & AGRICULTURE

- **Calpine Corp.** - One of North America's leading power companies helps ensure reliable and profitable operation by means of consolidated Internet information portals.
- **Gulf Energia SGPS SA** - The first-ever system for customer identification by fingerprint allows driver's one-touch purchasing of gasoline.
- **Little Diversified Architectural Consulting** - Integration of natural light analysis into 3-D architecture software facilitates the design of sustainable buildings that take maximum advantage of natural light.
- **SAT Corp./Lyondell-Citgo Refining LP** - Mobile workflow management technology catalyzes a new focus on proactive and preventive maintenance of oil refinery assets, lowering costs and eliminating most secondary failures (see story, page 36).
- **SK Corp.** - Korea's largest petroleum and chemical company transformed 140 legacy systems into a single integrated ERP environment.

Continued from page 29
 clearing \$23 trillion worth of securities annually. Then came Sept. 11, 2001, and Perretti realized he needed to push the edge even further — more than 1,000 miles further.

DTCC, a New York-based firm, provides the primary infrastructure for the clearing and settlement of the majority of the equity, corporate debt and bond transactions in the U.S. And although DTCC continued to operate through the Sept. 11 terrorist attacks on New York and Washington, Perretti and his C-level executives knew the company could be targeted next.

"In 2002, we put together a task force to look how far we could go outside of the region and still provide recovery-within-hours time frames. We have very strict time frames for recovery, required by the Fed," Perretti says.

The task force looked at a number of items, including IT staff distribution and diversity, to ensure that remote data centers would have the proper personnel to run them if the other data centers were destroyed. The task force devised an architecture of remote data centers dispersed throughout the New York region and beyond that would simultaneously replicate data among them.

But of all the components of the multihop remote data-replication scheme, none was more challenging than ensuring that the data would be consistent as it was replicated so that if any one site was lost, the data could be rebuilt.

"The most difficult part was synchronizing the amount of data we have — 6TB of addressable storage," says Bella Zgut, vice president of database management at DTCC, referring to the amount of mainframe data being replicated over the various distances.

DTCC's task force was made up of a number of IT areas within the company, each working on its own component and then working with the others to come up with a complete solution. What Perretti and other members of his team didn't know was how far ahead DTCC was in the disaster recovery game.

While completing the project, an April 2003 interagency white paper called for financial firms to "maintain sufficient geographically dispersed resources to meet

recovery and resumption objectives." The white paper also suggested moving disaster recovery sites 200 to 300 miles away from the primary data center.

"We didn't even talk about the industry white paper. We were ahead of the white paper every time they came out with something," Zgut says.

DTCC chose EMC Corp.'s Symmetrix arrays and its Symmetrix Remote Data Facility multihop data-mirroring software. The remote data centers can provide disaster recovery within three hours of disruption and a period of data loss ranging from zero to 30 min-

utes. The additional remote data centers, which Perretti declined to enumerate, also enabled DTCC to further decentralize its data processing operations and enhance communications.

Perretti chose redundant, fault-tolerant OC3 lines created out of a continuous ring of OC48 that was sliced down into individual OC3 lines, some being used for Fibre Channel and others for Escon.

The centers became fully operational in May 2003, just over one year after the project was kicked off — and one month ahead of the scheduled June delivery date.

● 4703

EXOSTAR LLC

Collaboration Platform Takes Security to New Level

BY DAN VERTON

It started as a relatively simple business-to-business hub. It became an industry-altering secure collaboration platform.

That's perhaps the best way to describe Herndon, Va.-based Exostar LLC's effort to develop an external collaboration environment. But it wasn't just any collaboration project. ForumPass 2.0, as it was later named, was deemed so secure that five of the world's largest aerospace and defense companies use it to store and share their most sensitive data.

The first version, developed in 2001, was based on Parametric Technology Corp.'s ProjectLink software and designed to facilitate collaboration among companies involved in joint development projects. However, the concept met substantial resistance from a user community that has historically been dead set against placing sensitive intellectual property in a third-party environment with little or no control over who can access the data.

Enter Exostar, an e-business founded jointly by BAE Systems, The Boeing Co., Lockheed Martin Corp., Raytheon Co. and Rolls-

Royce PLC with the mission of connecting those companies and their suppliers and facilitating more efficient collaboration on major projects. Security was their top concern from the start.

"The CIOs from each company [said], 'Unless our chief security officers all sign off on this, we absolutely have no intention of putting our intellectual property outside of our firewall and behind yours and all commingled together,'" says Jeff Nigriny, chief security officer at Exostar, who was responsible for engineering the new virtual collaboration environment.

That first meeting led to a two-day conference of technical experts from each of the five aerospace companies. They ultimately developed a list of 87 baseline requirements that they agreed would

make the collaboration platform secure enough to handle their data. "For the first time, five of the largest aerospace companies agreed on what secure collaboration is and what it should look like," says Nigriny.

The key to success was enabling users from different companies to control the data they owned, regardless of where it was stored.

"We had to set up a system from scratch by which the owners of the data could encrypt the data with keys that they possessed so that not even the Exostar site administrators could recover the data," says Andrew Jaquith, pro-

Continued on page 36



Jeff Nigriny

DAN VERTON

Achieve Business Intelligence Success!

COMPUTERWORLD



BUSINESS INTELLIGENCE PERSPECTIVES

September 27-29, 2004

JW Marriott
Desert Springs Resort
Palm Desert, California

The leading executive conference for:

- Business Intelligence
- Performance Management
- Risk Management
- Analytic Technologies
- Data Warehousing and Mining
- Best Practices in BI
- Regulatory IT

Visionary & Featured Speakers



ANDREAS S. WEIGEND, Ph.D.

former Chief Scientist
Amazon.com



CECILIA CLAUDIO

EVP and CIO
Zurich Financial Services



NIDA DAVIS

Senior Enterprise Architect
Federal Reserve System (FRS)



MIKE HARTE

CIO
PFPC



GREG MCMILLAN

Enterprise Business Intelligence and
Data Warehousing Manager
Ford Motor Company



JIM PATHMAN

CIO
Accredited Home Lenders



JOE SCHMADEL

Senior Director of
Business Technology
Pfizer



MATT SLONAKER

Director of Enterprise Business Intelligence
H&R Block/Option One Mortgage

For more information, visit www.biperspectives.com/cw or call 1-800-883-9090

For sponsorship information, contact Leo Leger at 1-508-820-8212 or leo_leger@computerworld.com



“ ... the range of perspectives at Computerworld's Business Intelligence conference was particularly valuable, and the interaction between speakers and the audience was excellent ... ”



Doug Busch, CIO, Intel

COMPUTERWORLD



BUSINESS
INTELLIGENCE
PERSPECTIVES

September 27-29, 2004

JW Marriott Desert
Springs Resort

Palm Desert, California

Find Proven Strategies and Solutions to Achieve Business Intelligence Success

- Get a High-level Overview in Navigating the Business Intelligence Process
- See How to Select and Deploy Business Intelligence Technologies
- Hear the Latest on Managing Performance
- Learn from Best Practices and User Case Studies

Why You Should Attend

Are you responsible for maximizing the value of your company's data assets? Want to exchange innovative ideas and strategies with other executives who share the same objectives? Then attend Computerworld's Business Intelligence Perspectives conference where you'll network with and learn from world-renowned experts and the nation's top user executives.

What You'll Learn

In this executive-forum setting, you'll hear directly from executives and managers in user companies. They'll address a wide variety of today's burning issues like:

The Big Picture for Business Intelligence

- Creating BI Vision and Strategies
- Planning, Designing and Building the BI Infrastructure
- Managing Historical and Operational Information Stores
- Information Retrieval and Reporting by Leveraging Off-the-shelf Enterprise Software
- Data Visualization, Prediction and Presentation that Leverages Customized Solutions
- Managing and Enhancing BI Applications and Infrastructure

Managing Performance

- Defining Metrics
- Applications
- Business Performance Management
- Scorecarding Corporate Performance Management
- CRM and ERP
- Corporate Governance and Compliance
- Executive Dashboards

Best Practices and Case Studies

- Showing Data's Real Value Through BI
- Deployment Successes/Pitfalls
- How to Apply Resources and Organize
- Mining Data and Using Predictive Analytics
- Measuring IT's Performance Using BI
- Managing Costs
- Innovative Applications of BI

Selecting the Right Technologies

- Infrastructure
- BI and Data Warehousing Tools
- Business Activity Monitoring
- Content Management
- Portals
- Data Modeling
- Standards, Corporate Governance and Compliance
- Managing Metadata

HEAR FROM EXPERTS AND VISIONARIES



ANDREAS S.
WEIGEND, Ph.D.
former Chief Scientist
Amazon.com



CECILIA
CLAUDIO
EVP and CIO
Zurich Financial Services

For more information and to register, visit www.bi

Learn from User Case Studies and Perspectives



KEITH BEARDEN
VP of Information
A-dec



NIDA DAVIS
Senior Enterprise Architect
Federal Reserve System (FRS)



MIKE HARTE
CIO
PFPC



GREG MCMILLAN
Enterprise Business
Intelligence and Data
Warehousing Manager
Ford Motor Company



JIM PATHMAN
CIO
Accredited
Home Lenders



JOE SCHMADEL
Senior Director of
Business Technology
Pfizer



MATT SLONAKER
Director of Enterprise
Business Intelligence
H&R Block/Option
One Mortgage

CONFERENCE AT-A-GLANCE (subject to change)

For details, updates, and to register visit www.biperspectives.com/cw

MONDAY, SEPTEMBER 27

10:00am - 9:00pm Registration Open
Noon - 5:00pm Pre-Conference Golf Outing
7:00pm - 9:00pm Welcome Reception



The Palm Course
The JW Marriott
Desert Springs Resort

TUESDAY, SEPTEMBER 28

7:00am - 8:30pm Registration Open
7:00am - 8:00am Buffet Breakfast
8:00am - 11:00am Opening Presentation and General Sessions

Keynote Speaker
Andreas S. Weigend, Ph.D.
former Chief Scientist, Amazon.com

11:00am - 12:30pm Concurrent End User Case Studies
12:30pm - 2:00pm Networking Luncheon
2:00pm - 4:45pm General Sessions
5:30pm - 8:30pm Expo with Buffet Dinner

Pre-Conference Golf Outing

Monday, September 27, Noon

Complimentary for Registered IT End-Users

The Pre-Conference Golf Outing at The Palm Course, located at the JW Marriott Desert Springs Resort, is complimentary (\$85 value) for registered IT End-Users. (Other participants, including sponsors and vendors, may play on an "as available" basis and are responsible for all applicable golf outing expenses.)

For details, contact Chris Leger at **1-508-820-8277**

WEDNESDAY, SEPTEMBER 29

7:00am - 8:00pm Registration Open
7:00am - 8:00am Buffet Breakfast
8:00am - 11:00am Opening Presentation and General Sessions

Keynote Speaker
Cecilia Claudio
EVP and CIO, Zurich Financial Services

11:00am - 12:10pm Concurrent End User Case Studies
12:10pm - 1:30pm Expo with Buffet Lunch
1:30pm - 5:00pm General Sessions
6:00pm - 8:00pm Gala Evening



**The JW Marriott Desert
Springs Resort**
Palm Desert, California

Hotel Reservations and Travel Services

IDG Travel is the official travel company for Business Intelligence Perspectives. They are your one-stop shop for exclusive discounted rates on hotel accommodations.

To reserve your accommodations, visit
www.etccentral.com



You can also call our Conference Housing line at
1-800-340-2262 (or 1-508-820-8686)

COMPUTERWORLD



BUSINESS INTELLIGENCE PERSPECTIVES

September 27-29, 2004
JW Marriott Desert
Springs Resort
Palm Desert, California

Please check ONE of the following:

I am an IT End-User

Earlybird Registration (through July 26, 2004)

\$995

General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

Pre-Conference Registration (after July 26 through August 16, 2004)

\$1295

General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

Full/Onsite Registration (after August 16, 2004)

\$1495

General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

IT End-Users are defined as those who are attending Business Intelligence Perspectives with an intent (and an IT spending budget) to potentially buy/lease hardware/software/services, etc. from our conference sponsors and are not themselves an IT vendor. As such, account representatives, business development personnel, analysts, and anyone else attending who does not have IT purchasing influence within their organization are excluded from the "IT End-User" designation. Interpretation and enforcement of this policy are at the sole discretion of Computerworld.

Attendee Profile: This section must be completed by IT End-Users only (opt-in for all other registrants) in order to process your application.

Your business/industry:
 Transportation / Utilities
 Mining / Oil / Gas
 Non Profit / Trade Association
 Media / Publishing
 Banking
 Manufacturing
 Accounting
 Insurance
 Real Estate
 Telecommunications
 Wholesale / Retail (non-computer)
 Consulting / Service Provider
 Advertising / Marketing / Public Relations
 Entertainment
 Education
 Food Industry
 Government / Military
 Travel - Hospitality / Recreation
 Manufacturing (non-IT)
 Automobiles

Computer, Communications or Peripheral Equipment
or Software / Manufacturing
 Agriculture / Forestry / Fisheries
 Other

Your job function:
 CEO / COO / Chairman / President
 CFO / CTO
 Director / Manager
 SVP / Executive Manager
 Director / Department Manager / Supervisor
 Corporate Business Staff
 Other Corporate Business Manager
 Consultant (Internal) / Other

The one item that best describes your involvement in the IT purchase process:
 Authorize the purchase
 Approve the budget
 Manage the purchase
 Purchase IT-related products, brands, services
 Identify / establish the need to purchase
 All of the above

Number of employees in your entire organization
(All locations):
 Over 10,000
 5,000 - 9,999
 1,000 - 4,999
 500 - 999
 Less than 500

What is the estimated annual revenue of your entire organization?
 Over \$1Billion
 \$1Billion - \$9.9Billion
 \$500 Million - \$999 Million
 \$100 Million - \$499 Million
 Less than \$100 Million

Your organization's annual ITIS budget for all ITIS projects:
 Over \$1Billion
 \$1Billion - \$9.9Billion
 \$500 Million - \$999 Million
 \$100 Million - \$499 Million
 Less than \$100 Million

What is your organization's primary vendor for:
BI/data management solutions?

SAS
 Cognos
 Business Objects
 Oracle
 IBM
 SAP
 PeopleSoft
 MicroStrategy
 Siebel
 Informatica
 Microsoft
 Information Builders
 Other

What is your organization's most mission critical project within BI/data management? This year?
 Creating the vision and strategy: Analyzing ROI
 Planning, designing, building the BI infrastructure
 Building / managing the operational information stores
 Retrieval and reporting: BI ERP, CRM, SCM
 Data visualization, prediction and presentation
 Managing / enhancing BI applications and infrastructure

IT-End Users, would you like to receive information about playing in the golf outing on Monday, September 27th? Yes No

My company is Sponsoring
Business Intelligence
Perspectives

\$995 (through July 26, 2004)
General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

\$1295 (after July 26 through August 16, 2004)
General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

\$1495 (after August 16, 2004)
General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

As a sponsor, you may be eligible to attend using a registration provided with your sponsorship. (If those registrations have already been assigned/used, then you may register at the prevailing rates above.) See the current list of sponsors at www.biperspectives.com. Questions? Call 1-800-883-9090 or email bipreg@computerworld.com.

I am a Financial/Equity
Analyst and/or Venture
Capital Professional

\$995 (through July 26, 2004)
General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

\$1295 (after July 26 through August 16, 2004)
General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

\$1495 (after August 16, 2004)
General Conference Package
(includes General Conference Sessions,
Expo, Meals & Receptions)

I am a representative of a Non-Sponsoring IT Vendor Company

\$5,000 Business Development Professional Package
for Sales, Marketing and Business Development Professionals
(includes General Conference Sessions, Expo, Meals & Receptions)

Vendors are encouraged to participate in Business Intelligence Perspectives through sponsorship. (Details are available by calling Leo Leger at 508-820-8212.) Alternatively, vendors (as well as other "non-IT end-user" professionals as defined by Computerworld), may apply for registration at the "non-sponsoring vendor" rate of \$5,000. Determination of what constitutes a "non-sponsoring vendor" registration is made exclusively by Computerworld. Please call 800-883-9090 with questions.

I am a qualified member of the press. I can verify my press credentials.

Press should call Iain Pollock at 1-781-915-5015 to register.

Please fax this completed application to **1-508-820-8254**

Payment Method

Check (checks must be received by September 3, 2004 payable to: Computerworld)
Mail to: Computerworld, Attn: Pam Malingowski, 500 Old Connecticut Path,
Framingham, MA 01701

American Express VISA MasterCard

Account Number: _____
Expiration Date: _____
Card Holder Name: _____
Signature of Card Holder: _____

Cancellation Policy (All of the following require written notification by September 3, 2004)

In the event of cancellation, the registrant has three options:
 1) He or she may substitute another attendee for the conference.
 2) He or she may transfer the registration to the Business Intelligence Perspectives 2005 conference.
 3) The registration fee will be refunded, less a \$250 service charge
(if written notice is received by September 3, 2004).

Please send cancellation requests via email to: bipreg@computerworld.com



Michigan's redesigned Crash system will help the state improve traffic safety and road design. Project contributors, from left to right, include Mary Wichman, manager; Jack Benac, project manager; and Douglass Couto, information officer.

MICHELLE KENDRICK

MICHIGAN DEPARTMENT OF TRANSPORTATION

Redesigned Database Improves Traffic Safety

BY JAIKUMAR VIJAYAN

As a state that averages more than 450,000 traffic accidents annually, Michigan maintains a mountain of crash-related data.

But the 650,000 or so documents generated each year as a result of those accidents were maintained in an archaic 1970s-era mainframe, and it was hard for users to access the information for legal purposes or safety research, for example. Traffic accident data sometimes took two years to wend its way into the system, known as Crash. And outdated data input methods often resulted in high error rates.

However, a recently completed multiagency project, called Crash Process Redesign, has changed much of that. The project involved representatives from the Michigan Department of Transportation (MDOT), the Michigan State Police and the Michigan Department of State — the principal users of the Crash database.

Under the project, the Crash database has been migrated to a new setting based on Oracle Corp.'s technology and Sybase Inc.'s PowerBuilder environment.

The heavily manual processes of the older system have been streamlined to a single process. Instead of retrieving data from mainframe magnetic tapes and storage cartridges, users can now access data via a browser-based interface.

The results have been gratifying, says Douglass Couto, information officer at MDOT. The gap between a traffic accident and data availability has been cut to 60 days. Processing and hardware costs have been reduced, as have data errors.

"We have identified about \$4 million in savings over the next three years in decreased cycle times and improved quality," says Jack Benac, project manager of the Crash redesign. More importantly, the redesigned Crash system will help improve traffic safety and road design by identifying accident risks and potential causes of traffic crashes and deaths, which cost the state \$9.4 billion last year, he says.

"The real return here is the reduced loss of life, which, to paraphrase a commercial, is priceless," Couto says.

But the upgraded database has also made it a lot easier for law enforcement officials to retrieve accident information, says Chief Arlan Winslow of the Imlay City Police Department. Winslow recently used the database to access information needed to apply for two road-improvement grants.

"Prior to having this in place, I would have had to contact the lo-

cal county road commissioner and the Michigan State Police to get the information," Winslow says.

The process, which used to take five to six business days, was instead accomplished immediately, he says. The revised database allows Winslow to quickly look for accident data using parameters such as location, time of day or number of accidents.

Key to the success of the project was the extensive collaboration that took place among the three principal stakeholders and others involved in the project, Couto says. It took nearly a year to gather business and technology requirements from multiple agencies, local governments, insurance companies, educational institutions and other users of the database. A joint governance structure that included representatives from each of the three major project owners provided daily oversight and served as an approval mechanism for ongoing budgeting and scheduling.

Development work was done with the help of Electronic Data Systems Corp., using Capability Maturity Model Level 5 from Carnegie Mellon University's Software Engineering Institute.

Ultimately, the fact that a redesigned database "could reduce accidents and maybe save some lives resulted in a level of commitment that I haven't seen in other projects," Couto says. **C 46937**

finalists

Wildlife Center of Virginia - A teaching hospital for wildlife medicine uses advanced e-learning technologies to educate students in Africa and South America.

FINANCE, INSURANCE & REAL ESTATE

CUNA Mutual Group - A single infrastructure provides secure access to a nationwide service provider's own employees, the employees of its 10,000 credit union clients and the credit union's customers.

Merrill Lynch & Co. - Users reading storage for local servers make Internet requests to a worldwide 500 TB storage pool, which reconfigures overnight and makes the requested storage available the next morning.

Moneris Solutions Corp. - A half-million merchants enjoy instant online access to daily and monthly reports on credit card transactions, plus the ability to download information directly into their own management systems.

PICC Property and Casualty Co. - The largest non-life insurance company in China establishes IT as its core competency, integrating all lines of business in a single standardized environment.

The Depository Trust & Clearing Corp. - The world's largest financial services post-trade organization established backup facilities 1,000 miles from the New York exchange, helping to insure uninterrupted clearance and settlement of securities (see story, page 29).

GOVERNMENT & NONPROFIT ORGANIZATIONS

City of Cape Town - The world's largest local government ERP system enhances the ability of 28,000 municipal employees to provide service to more than 3 million citizens.

New York City Department of Finance - A city property ownership department that responds to more than 1 million requests each year provides access to deeds and other legal instruments.

North Shore-Long Island Jewish Health System - One of the U.S.'s largest nonprofit health care systems applies best practices through combined clinical and non-clinical applications.

Province of Ontario - A fully integrated, standards-based network enables 60,000 provincial employees to share information.

Michigan Department of Transportation - Information about 450,000 annual vehicle crashes is brought together into one database, lowering costs and increasing the visibility of accident risks (see story, this page).

MANUFACTURING

Corrugated Supplies Corp. - A midsize corrugated-materials manufacturer accepts orders from its packaging customers electronically and provides updated status right up to delivery.

Hewlett-Packard Co. - The computer industry's longest supply chain is consolidated onto an interstate collaborative e-marketplace, reducing cycle times and enhancing value chain veracity in a collaborative way.

Continued on page 36

©2009 Xerox Corporation. Xerox® and Xerox and Cannon Show Your Business is Not Like Any Other™ are trademarks of Xerox Corp. imagerUNNER® is a trademark of Canon Inc.

ANYWARE™

NOT BUSINESS AS USUAL

PRESENTING CUSTOMIZATION. BECAUSE THERE'S NO BUSINESS LIKE YOUR BUSINESS. Your business isn't generic. So, now you can have applications created for imagerUNNER® that meet many of the unique needs of your business. You can tailor your choices on its touch-screen user interface. You can



ImageRUNNER SOFTWARE

Hello, my name is

Carole

Can't there be a machine
that adapts to my business,
not the other way around?

www.imagerunner.com 1-800-OK-CANON

eliminate time-consuming steps from the workflow process. You can
make it simple and efficient. And that's just scratching the surface.
Yes, customization is not business as usual.

Canon
KNOW HOW®

finalists

Continued from page 33

■ **Infineon Technologies AG** – Development of a radical new manufacturing planning system, capable of handling new complexities, allows a busy manufacturing system to upgrade without disruption.

■ **Kirchner Corp.** – Constantly traveling jewelry sales representatives enter new orders through wireless handheld PDAs on the spot, increasing accuracy and factory flexibility while reducing delivery times to the customer.

■ **Novalux Inc.** – Intensive simulation of fundamental physics enables the design and production of a radical new laser that can be 50 times smaller and two orders magnitude more efficient than previous devices.

MEDIA, ARTS & ENTERTAINMENT

■ **Apple Computer Inc.** – A digital music jukebox provides Windows and Macintosh users with a fully integrated music store.

■ **Kasenna Inc.** – A dramatic reduction in bandwidth requirements allows even small organizations to offer video on demand, lowering the cost of training.

■ **Museum of Modern Art (New York)** – A streamlined interface reduces the number of Web site clicks by 75%, serving more than 4,000 pages to the museum's constituency and maintaining connections during major renovations.

■ **Reuters Group** – Pioneering use of live and on-demand video delivers company news to employees in 197 offices in 94 countries.

■ **American Museum of the Moving Image** – Ultra-high-capacity tape drives enable the high-resolution scanning, storage and retrieval of key items from a collection of 100,000 films, recordings and images.

■ **University of Michigan** – Multimedia technology enables the addition of a new set of Arabic-language courses to meet demand among nonacademics who will use Arabic in their business careers.

■ **Zivible Corp.** – People can now repurpose, package and share content without creative limitations, from any data source to any device.

MEDICINE

■ **Cogent Systems** – Placing complete information in a health care provider's hands at the critical "moment of care" when clinical decisions are being made improves operational efficiency and enhances patient care.

■ **Ekos Corp.** – Low-energy ultrasound dramatically improves the rate at which catheter-administered drugs reach the areas in the body where they are needed, providing particular benefit to stroke victims.

■ **R2 Technology Inc.** – The first organization to receive FDA approval for computer-enhanced mammogram interpretation applies its advanced learning algorithms to the detection of abnormalities in lung images, increasing accuracy by providing a second pair of eyes.

■ **Robertson Research Institute** – A handheld clinician's assistant holds a wealth of medical knowledge typically unavailable in developing countries and provides updated diagnosis response (see story, next page).

SAT CORP.

Handhelds Help Refineries Quickly Spot Problems

BY PATRICK THIBODEAU

Refineries, otherworldly-looking places when seen from a distance, are actually marvels of engineering complexity, with miles of interconnected pipes and thousands of pieces of equipment processing chemicals and petroleum products. But historically, an essential tool for keeping a refinery's systems from breaking down has been the lowly clipboard.

However, paper documentation of refinery processes is giving way to a technology developed by Houston-based SAT Corp. that marries handheld devices, radio frequency identification (RFID) tags and workflow applications. Workers are using the technology to help ensure smooth and continuous operation of refineries' systems.

Much of what goes on in a refinery can be controlled and monitored automatically, but "there are still things that you want someone to physically walk by and touch and feel and make sure a piece of equipment is running well," says Bill Johnson, reliability manager at Houston-based Lyondell-Citgo Refining LP, which is using SAT's IntelaTrac product.

Instead of relying on a checklist, IntelaTrac reads an RFID tag that a worker scans on a piece of equipment and then provides device-specific data about what to check for, how often to check for it and what steps to take in



SCOTT KROHN

[IntelaTrac] will prompt some action. It allows us to identify problems earlier and do better troubleshooting when we identify those problems.

BILL JOHNSON,
RELIABILITY MANAGER,
LYONDELL-CITGO REFINING

the event of an abnormal reading.

"This thing will prompt some action," says Johnson. The handheld may advise anything from adjusting a valve to alerting a supervisor. "It allows us to identify problems earlier and do better troubleshooting when we identify those problems," Johnson says.

Because the data is uploaded into the refinery's computer systems, workers can now look for trends over longer periods of time, he explains. And in a 24-hour operation like a refinery, where slow changes in pressure, temperature or vibration can signal the onset of a problem in a piece of equipment, a single worker might not be able to detect a trend in the course of an eight-hour shift.

Harry Forbes, an analyst at ARC Advisory Group Inc. in Dedham, Mass., says people often think of mobile units as replacements for devices already in the control room. But, he says, IntelaTrac "is really a workflow solution to try to capture information that's in the field and make it usable electronically very quickly."

Forbes says SAT's technology is the leader in the processing industry. "I don't think there is a close second right now," he says.

The return on investment for IntelaTrac is hard to measure, says Johnson, because it involves cost avoidance — an estimate based on problems avoided as a result of early detection. "We feel like it's paid for itself," he says.

Don Frieden, SAT's CEO and founder, says he tells customers that reducing costly secondary equipment failures can result in payback in three to six months. He uses the example of an automobile water pump: If a leak is detected quickly, the cost of repair is minimal. But once the water is gone, the engine may go as well — the secondary failure. Secondary failures typically cost eight to 10 times more than primary equipment failures, Frieden says.

© 46896

Continued from page 32
gram director at @Stake Inc., who worked with Nigriny on the encryption technology. "So you're essentially substituting encryption using your own keys for the infrastructure that you would ordinarily control."

They came up with the revolutionary idea of using hardware storage modules to encrypt databases and digital certificates from VeriSign Inc. to authenticate users. Project managers at each company were given key servers

so they could upload documents and generate unique keys on their browsers for each document.

The trick was enabling the other users' browsers to decrypt the symmetric key, which had already been encrypted with a public key.

The solution, says Nigriny, was Security Assertion Markup Language, an XML-based ticket emitted by ForumPass that travels with a document. The user trying to decrypt the document presents that ticket and the encrypted document to the key server, which

validates the ticket and the individual's identity.

"Now the document is in ForumPass, and only the people who have been granted access can see it," says Nigriny. "If you don't have access to the document, there's nothing even there to click on."

"Aerospace companies have a long, rich history of robust perimeter defense," says Jaquith. "The notion that they would let somebody else store their data on a network that isn't their own is close to revolutionary." © 46993

ROBERTSON RESEARCH INSTITUTE

Software Gives Doctors a Virtual Second Opinion

BY EUGENE A. DEMAIRE

In a developing nation, a physician enters his observations of a patient's condition into a tablet computer. A user-friendly application compares the data to a massive knowledge base, then requests additional information from the physician to facilitate a rapid and accurate diagnosis through a unique "virtual dialogue."

That's the goal of the NxOpinion project at Robertson Research Institute, which is testing an innovative approach to medical informatics that's aimed at physicians in underserved communities.

According to Dr. Joel Robertson, founder and CEO of Saginaw, Mich.-based RRI, the organization has been working on NxOpinion (pronounced "next opinion") since 1992, when he decided to provide physicians with "exception-based, rapid diagnostics, for when a person fits the textbook case but doesn't get better."

The decision-support system required the building of interfaces for busy physicians and the development of content management systems for the huge amount of

data that users would access and add to, Robertson explains.

"The problem with most [diagnostic support] products is that physicians are impatient and in a hurry — they don't like spending time on re-entry of data," says Barry Heib, a medical doctor and an analyst at Gartner Inc.

"Other databases require doctors to have a medical informatics background. We want NxOpinion to be usable by any physician," says Robertson.

"The output must be equally user-friendly as the input," he says, adding that NxOpinion is a mobile technology that could eventually "reside on a PDA, tablet computer or PC and be updated when those devices are synced."

"Evidence-based medicine is especially important in helping physicians [in developing nations] make a diagnosis when they may have only one chance to refer a patient to a specialist," says Dr. Mark Bates, medical director of the NxOpinion project.

NxOpinion "was designed to facilitate and enhance workflow," says Bates, who participated in pilot testing in the Dominican Republic. "I didn't think any of the doctors there had seen a tablet [PC] before, but they easily picked it up. Adding data worked better than expected, thanks to the flexibility of the English/Spanish translation capability."

RRI contracted with Sagestone

Consulting Inc. to develop NxOpinion. The Grand Rapids, Mich.-based company built the application with Microsoft Corp. technologies.

"The core of the application engine takes data, correlates it and produces differential diagnoses," says Keith Brophy, CEO of Sagestone and chief technology officer of NxOpinion at RRI, referring to the Bayesian logic used by the system. "It's a unique way of leveraging decision theory."

"We wanted dynamic updating of data. As evidence is entered, the diagnostic options presented change," says Brophy. "We needed a fast turnaround of four clicks or less, because our testing found that if it took three minutes or more, a diagnosis would be abandoned."

NxOpinion faces several challenges, including keeping data current, interfacing with existing systems and obtaining user feedback, notes Heib.

Maintaining database integrity has required "rigorous validation," Bates says. Data collected in the field could lead to the ability to track the prevalence of diseases in different regions, he adds.

Another goal of the NxOpinion project is to help reduce medical errors, which are often the result of bad processes rather than inexperience, says Bates.

Testing will continue in the U.S., the Dominican Republic, Africa and Australia through this year and next; RRI plans to release NxOpinion in 2005.

Robertson is also eyeing possible long-term goals for NxOpinion, such as incorporating multilingual and culture-specific interfaces, using it as an educational tool and eventually expanding from urgent care to chronic and preventive care.

RRI's nonprofit status has helped it gain cooperation from patient-care organizations worldwide, since its mission is to help save lives rather than compete for business.

"It's an unusual approach," says Heib. "What they're trying to do is certainly noble and laudable, and they'll hopefully be able to add value to health care in underserved communities."

"We're trying to revolutionize medicine, not get rich," Robertson says. **G 46846**



Physicians in the Dominican Republic use a tablet PC to test the user interface of NxOpinion.

ROBERTSON RESEARCH INSTITUTE

finalists

SCIENCE

SPSS Inc. and Children's Memorial Hospital (Chicago) - A scientist uses data mining technology to detect patterns in the large amount of data generated from a child's brain tumor sample, advancing research in the field.

United Devices Inc. - The world's largest computer grid aggregates the unused computer capacity of more than 2 million volunteers for critical projects such as identifying drug candidates for treating smallpox, anthrax and cancer.

SCIENCE

Columbus Zoo (Ohio) - Streaming video and audio from cameras throughout the 100-acre zoo complex improve the ability of veterinarians to care for animals while remaining unobtrusive during critical events such as births.

CoreTek Inc. - Tunable lasers allow fiber-optic networks to operate programs at any of the network's wavelengths, dramatically increasing Internet bandwidth.

Pittsburgh Supercomputing Center - The country's most powerful supercomputer supports more detailed understanding of earthquake intensity.

Rice University - Leadership in software techniques for high-performance computing has kept the job of scientist and engineer manageable while the hardware systems they rely on become increasingly complicated.

Virginia Polytechnic Institute and State University - The world's third-most-powerful supercomputer is created from scratch in three months using PCs, dramatically lowering the cost of advanced scientific research.

TRANSPORTATION

Air New Zealand Ltd. - Rapid analysis and reporting of more than 20 million rows of complex revenue and cost data per month give the small airline the ability to compete against industry giants.

Britannia Airways Ltd. - Cabin crews receive detailed flight instructions into the same handheld PDAs that they then use to handle in-flight purchase transactions.

California Department of Transportation, District 4 Maintenance - Online tracking of more than 1,000 traffic accidents per month reduces the time to clear an accident scene.

Centre for Railway Information Systems - The world's second-largest railway system, with 11 million passengers a day, enables same-day ticket purchasing from a wide range of sources.

U.S. Department of Transportation, Bureau of Transportation Statistics - The agency charged with supplying data and statistics to the whole federal transportation community dramatically improves the speed and flexibility of its services.

Hutchison Port Holdings - The world's leading port investor, developer and operator optimizes the flow of materials with a worldwide terminal management system, enhancing the power of its customers' supply chains.

Southwest Airlines Co. - A materials management strategy enables an airline's maintenance plan to be immediately reflected in its material and supply plan. **G 46846**

finalists

Continued from page 33

■ **Infineon Technologies AG** - Development of a radical new manufacturing planning system, capable of handling new complexities, allows a bus manufacturing system to upgrade without disruption.

■ **Kirchner Corp.** - Constantly traveling jewelry sales representatives enter new orders through wireless handheld PDAs on the spot, increasing accuracy and factory flexibility while reducing delivery times to the customer.

■ **Novalux Inc.** - Intensive simulation of fundamental physics enables the design and production of a radical new laser that can be 50 times smaller and two orders of magnitude more efficient than previous devices.

MEDIA, ARTS & ENTERTAINMENT

■ **Apple Computer Inc.** - A digital music jukebox provides Windows and Macintosh users with a fully integrated music store.

■ **Kasenna Inc.** - A dramatic reduction in bandwidth requirements allows even small organizations to offer video on demand, lowering the cost of training.

■ **Museum of Modern Art (New York)** - A streamlined interface reduces the number of Web site clicks by 75%, serving more than 4,000 pages to the museum's constituency and maintaining connections during major renovations.

■ **Reuters Group** - Pioneering use of live and on-demand video delivers company news to employees in 197 offices in 94 countries.

■ **American Museum of the Moving Image** - Ultra-high-capacity tape drives enable the high-resolution scanning, storage and retrieval of key items from a collection of 100,000 films, recordings and images.

■ **University of Michigan** - Multimedia technology enables the addition of a new set of Arabic-language courses to meet demand among nonacademics who will use Arabic in their business careers.

■ **Vizible Corp.** - People can now repurpose, package and share content without creative limitations, from any data source to any device.

MEDICINE

■ **Cogn Systems** - Placing complete information in a health care provider's hands at the critical "moment of care" when clinical decisions are being made improves operational efficiency and enhances patient care.

■ **Ekos Corp.** - Low-energy ultrasound dramatically improves the rate at which catheter-administered drugs reach the areas in the body where they are needed, providing particular benefit to stroke victims.

■ **R2 Technology Inc.** - The first organization to receive FDA approval for computer-enhanced mammogram interpretation applies its advanced learning algorithms to the detection of abnormalities in lung images, increasing accuracy by providing a second pair of eyes.

■ **Robertson Research Institute** - A handheld clinician's assistant holds a wealth of medical knowledge typically unavailable in developing countries and provides updated diagnosis response (see story, next page).

SAT CORP.

Handhelds Help Refineries Quickly Spot Problems

BY PATRICK THIBODEAU

Refineries, otherworldly-looking places when seen from a distance, are actually marvels of engineering complexity, with miles of interconnected pipes and thousands of pieces of equipment processing chemicals and petroleum products. But historically, an essential tool for keeping a refinery's systems from breaking down has been the lowly clipboard.

However, paper documentation of refinery processes is giving way to a technology developed by Houston-based SAT Corp. that marries handheld devices, radio frequency identification (RFID) tags and workflow applications. Workers are using the technology to help ensure smooth and continuous operation of refineries' systems.

Much of what goes on in a refinery can be controlled and monitored automatically, but "there are still things that you want someone to physically walk by and touch and feel and make sure a piece of equipment is running well," says Bill Johnson, reliability manager at Houston-based Lyondell-Citgo Refining LP, which is using SAT's Intelatrac product.

Instead of relying on a checklist, Intelatrac reads an RFID tag that a worker scans on a piece of equipment and then provides device-specific data about what to check for, how often to check for it and what steps to take in



SCOTT KUPFER

[Intelatrac] will prompt some action. It allows us to identify problems earlier and do better troubleshooting when we identify those problems.

BILL JOHNSON,
RELIABILITY MANAGER,
LYONDELL-CITGO REFINING

Continued from page 32

gram director at @Stake Inc., who worked with Nigriny on the encryption technology. "So you're essentially substituting encryption using your own keys for the infrastructure that you would ordinarily control."

They came up with the revolutionary idea of using hardware storage modules to encrypt databases and digital certificates from VeriSign Inc. to authenticate users. Project managers at each company were given key servers

so they could upload documents and generate unique keys on their browsers for each document.

The trick was enabling the other users' browsers to decrypt the symmetric key, which had already been encrypted with a public key.

The solution, says Nigriny, was Security Assertion Markup Language, an XML-based ticket emitted by ForumPass that travels with a document. The user trying to decrypt the document presents that ticket and the encrypted document to the key server, which

Because the data is uploaded into the refinery's computer systems, workers can now look for trends over longer periods of time, he explains. And in a 24-hour operation like a refinery, where slow changes in pressure, temperature or vibration can signal the onset of a problem in a piece of equipment, a single worker might not be able to detect a trend in the course of an eight-hour shift.

Harry Forbes, an analyst at ARC Advisory Group Inc. in Dedham, Mass., says people often think of mobile units as replacements for devices already in the control room. But, he says, Intelatrac "is really a workflow solution to try to capture information that's in the field and make it usable electronically very quickly."

Forbes says SAT's technology is the leader in the processing industry. "I don't think there is a close second right now," he says.

The return on investment for Intelatrac is hard to measure, says Johnson, because it involves cost avoidance — an estimate based on problems avoided as a result of early detection. "We feel like it's paid for itself," he says.

Don Frieden, SAT's CEO and founder, says he tells customers that reducing costly secondary equipment failures can result in payback in three to six months. He uses the example of an automobile water pump: If a leak is detected quickly, the cost of repair is minimal. But once the water is gone, the engine may go as well — the secondary failure. Secondary failures typically cost eight to 10 times more than primary equipment failures, Frieden says.

© 46896

validates the ticket and the individual's identity.

"Now the document is in ForumPass and only the people who have been granted access can see it," says Nigriny. "If you don't have access to the document, there's nothing even there to click on."

"Aerospace companies have a long, rich history of robust perimeter defense," says Jaquith. "The notion that they would let somebody else store their data on a network that isn't their own is close to revolutionary." © 46993

COMPUTERWORLD HONORS 2004

COMPUTERWORLD June 7, 2004

ROBERTSON RESEARCH INSTITUTE Software Gives Doctors a Virtual Second Opinion

BY EUGENE A. DEMATRE

In a developing nation, a physician enters his observations of a patient's condition into a tablet computer. A user-friendly application compares the data to a massive knowledge base, then requests additional information from the physician to facilitate a rapid and accurate diagnosis through a unique "virtual dialogue."

That's the goal of the NxOpinion project at Robertson Research Institute, which is testing an innovative approach to medical informatics that's aimed at physicians in underserved communities.

According to Dr. Joel Robertson, founder and CEO of Saginaw, Mich.-based RRI, the organization has been working on NxOpinion (pronounced "next opinion") since 1992, when he decided to provide physicians with "exception-based, rapid diagnostics, for when a person fits the textbook case but doesn't get better."

The decision-support system required the building of interfaces for busy physicians and the development of content management systems for the huge amount of

data that users would access and add to, Robertson explains.

"The problem with most [diagnostic support] products is that physicians are impatient and in a hurry — they don't like spending time on re-entry of data," says Barry Heib, a medical doctor and an analyst at Gartner Inc.

"Other databases require doctors to have a medical informatics background. We want NxOpinion to be usable by any physician," says Robertson.

"The output must be equally user-friendly as the input," he says, adding that NxOpinion is a mobile technology that could eventually "reside on a PDA, tablet computer or PC and be updated when those devices are synced."

"Evidence-based medicine is especially important in helping physicians [in developing nations] make a diagnosis when they may have only one chance to refer a patient to a specialist," says Dr. Mark Bates, medical director of the NxOpinion project.

NxOpinion "was designed to facilitate and enhance workflow," says Bates, who participated in pilot testing in the Dominican Republic. "I didn't think any of the doctors there had seen a tablet [PC] before, but they easily picked it up. Adding data worked better than expected, thanks to the flexibility of the English/Spanish translation capability."

RRI contracted with Sagetime

Consulting Inc. to develop NxOpinion. The Grand Rapids, Mich.-based company built the application with Microsoft Corp. technologies.

"The core of the application engine takes data, correlates it and produces differential diagnoses," says Keith Brophy, CEO of Sagetime and chief technology officer of NxOpinion at RRI, referring to the Bayesian logic used by the system. "It's a unique way of leveraging decision theory."

"We wanted dynamic updating of data. As evidence is entered, the diagnostic options presented change," says Brophy. "We needed a fast turnaround of four clicks or less, because our testing found that if it took three minutes or more, a diagnosis would be abandoned."

NxOpinion faces several challenges, including keeping data current, interfacing with existing systems and obtaining user feedback, notes Heib.

Maintaining database integrity has required "rigorous validation," Bates says. Data collected in the field could lead to the ability to track the prevalence of diseases in different regions, he adds.

Another goal of the NxOpinion project is to help reduce medical errors, which are often the result of bad processes rather than inexperience, says Bates.

Testing will continue in the U.S., the Dominican Republic, Africa and Australia through this year and next; RRI plans to release NxOpinion in 2005.

Robertson is also eyeing possible long-term goals for NxOpinion, such as incorporating multilingual and culture-specific interfaces, using it as an educational tool and eventually expanding from urgent care to chronic and preventive care.

RRI's nonprofit status has helped it gain cooperation from patient-care organizations worldwide, since its mission is to help save lives rather than compete for business.

"It's an unusual approach," says Heib. "What they're trying to do is certainly noble and laudable, and they'll hopefully be able to add value to health care in underserved communities."

"We're trying to revolutionize medicine, not get rich," Robertson says. • 46846



Physicians in the Dominican Republic use a tablet PC to test the user interface of NxOpinion.

ROBERTSON RESEARCH INSTITUTE

finalists

■ SPSS Inc. and Children's Memorial Hospital (Chicago)

A scientist uses data mining technology to detect patterns in the large amount of data generated from a child's brain tumor sample, advancing research in the field.

■ United Devices Inc. - The world's largest computer grid aggregates the unused computer capacity of more than 2 million volunteers for critical projects such as identifying drug candidates for treating smallpox, anthrax and cancer.

SCIENCE

■ Columbus Zoo (Ohio) - Streaming video and audio from cameras throughout the 100-acre zoo complex improve the ability of veterinarians to care for animals while remaining unobtrusive during critical events such as births.

■ CoreTek Inc. - Tunable lasers allow fiber-optic networks to operate programs at any of the network's wavelengths, dramatically increasing Internet bandwidth.

■ Pittsburgh Supercomputing Center - The country's most powerful supercomputer supports more detailed understanding of earthquake intensity.

■ Rice University - Leadership in software techniques for high-performance computing has kept the job of scientist and engineers manageable while the hardware systems they rely on become increasingly complicated.

■ Virginia Polytechnic Institute and State University - The world's third-most-powerful supercomputer is created from scratch in three months using PCs, dramatically lowering the cost of advanced scientific research.

TRANSPORTATION

■ Air New Zealand Ltd. - Rapid analysis and reporting of more than 20 million rows of complex revenue and cost data per month give the small airline the ability to compete against industry giants.

■ Britannia Airways Ltd. - Cabin crews receive detailed flight instructions into the same handheld PDAs that they then use to handle in-flight purchase transactions.

■ California Department of Transportation, District 4 Maintenance - Online reporting of more than 1,000 traffic accidents per month reduces the time to clear an accident scene.

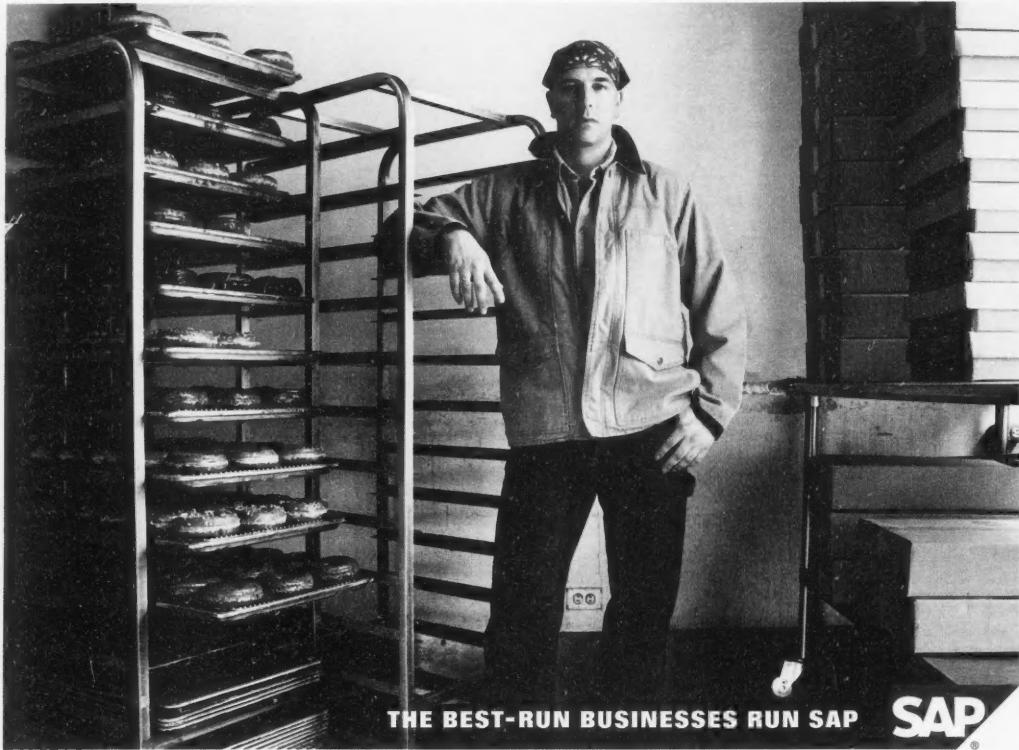
■ Centre for Railway Information Systems - The world's second-largest railway system, with 11 million passengers a day, enables same-day ticket purchasing from a wide range of sources.

■ U.S. Department of Transportation, Bureau of Transportation Statistics - The agency charged with supplying data and statistics to the whole federal transportation community dramatically improves the speed and flexibility of its services.

■ Hutchison Port Holdings - The world's leading port investor, developer and operator optimizes the flow of materials with a worldwide terminal management system, enhancing the power of its customers' supply chains.

■ Southwest Airlines Co. - A materials management strategy enables an airline's maintenance plan to be immediately reflected in its material and supply plan. • 46504

COMPANIES THAT THOUGHT THEY COULDN'T AFFORD SAP RUN SAP



THE BEST-RUN BUSINESSES RUN SAP

SAP®

You don't have to be big to think big. Or to run SAP.[®] With a variety of solutions for small and midsize businesses, SAP is an affordable choice for growing companies. Working with partners experienced in your industry, SAP can deliver scalable solutions to make your business run more efficiently. And do it faster than you ever thought possible. Visit sap.com/value or call 800 880 1727 to see big ideas for your company.

© 1999 SAP AG. SAP is a registered trademark of SAP AG in Germany and several other countries.

TECHNOLOGY

06.07.04

FUTURE WATCH

The Cognitive Personal Assistant

Carnegie Mellon University researchers are developing an artificial-intelligence-based system that may eventually help schedule meetings and prioritize e-mail for busy managers. **Page 41**

SECURITY MANAGER'S JOURNAL

Wireless Hackers Leave No Tracks

Vacationing Vince Tuesday discovers that sloppy security on home WLANs gives hackers a launching pad for truly anonymous attacks. **Page 42**

OPINION

Pentagon Devises Innovative IT Strategy

Pressure to maintain existing systems and meet new challenges has turned the DOD into an innovator in supporting real-time responsiveness across an enterprise, says Paul A. Strassmann. **Page 44**



WHEN THE ECONOMY surged in the late 1990s, office furniture maker Haworth Inc. rode the wave. A booming demand for new office space plus several acquisitions propelled the 52-year-old company to \$2 billion in sales in 2002, making it the world's second-largest designer and manufacturer of office furniture.

As the recession deepened, Holland, Mich.-based Haworth took a double hit: Not only did sales stall as customers retrenched, but a glut of used furniture also hit the market as dot-com companies bombed. Sales plunged 40%.

Looking for ways to bring costs back in line with revenue, Haworth in 2002 embarked on an ambitious program to overhaul its supply chain systems. It has completed a \$14 million rollout of transportation and warehouse management systems that have slashed freight costs, boosted the efficiency of warehouse workers and produced unexpected qualitative benefits.

Together, these two flow systems manage the flow of Haworth products from manufacture through delivery to the customer. The Transportation Management System (TMS) consists of an optimization package called NetWorks Transport and a carrier communication module called NetWorks Carrier from Manugistics Group Inc. in Rockville, Md. The system looks at customer orders, factory schedules, carrier rates and availability, and shipping costs and produces optimum, lowest-cost delivery plans. Plans are produced daily and updated every 15 minutes. The system also has an automated interface that lets Haworth negotiate deliveries with its carriers.

The Warehouse Management System (WMS) is a customized version of iristaWarehouse from Irista Inc. in Milwaukee. It tracks and controls the flow of finished goods from the receiving dock at any of Haworth's three dis-



Haworth's Jim Rohrer and Micheal Moon saw a 10% reduction in freight costs after implementing TMS.

Refurnishing THE Supply Chain

Office furniture maker Haworth Inc. slashed its warehousing and shipping costs by redesigning its transportation and warehouse management systems. **By Gary H. Anthes**

tribution centers to the customer site. Acting on shipping plans from TMS, WMS directs the movement of goods based on real-time conditions of space, equipment, inventory and personnel.

Haworth's objective for TMS was to optimize deliveries from the standpoint of freight cost, says Micheal Moon, vice president for global information services. That required mapping out more

efficient routes, minimizing "less-than-truckload" shipments and reducing damage to goods.

The goal for WMS was to reduce labor costs in the warehouse using several methods, including "cross-docking," which lets goods earmarked for a specific customer move directly from the receiving dock to the shipping dock without being checked into the system

and then picked from inventory.

It's a tricky environment for a number of reasons, Moon says. For example, a shipment might have to meet a strict 15-minute delivery window on a dock in New York. And, he says, it isn't a simple matter of delivering a monolithic order, like a crate of oranges.

"You take a standard workstation like this," Moon says, waving his arm

around his modular office. "You've got the walls, the desk, the overhead files and so forth. All these may come from different manufacturing sites, all coming together at a distribution center and then to the customer site in a sequence that allows them to install it. And maybe the customer wants to install his furniture over the weekend. You can't have missing parts off the truck, or he may not be able to move in on Monday."

TMS replaces a mostly manual system aided by spreadsheets and driven by "tribal knowledge," Moon says.

"Tribal knowledge told you that if you are going to Texas, you don't want to stop in Alabama on the way, because it's a little detour." But the optimization software sometimes comes up with counterintuitive solutions, he says, and it just might tell Haworth planners that the freight savings from filling the truck with the Texas and Alabama orders more than offset the cost of the detour.

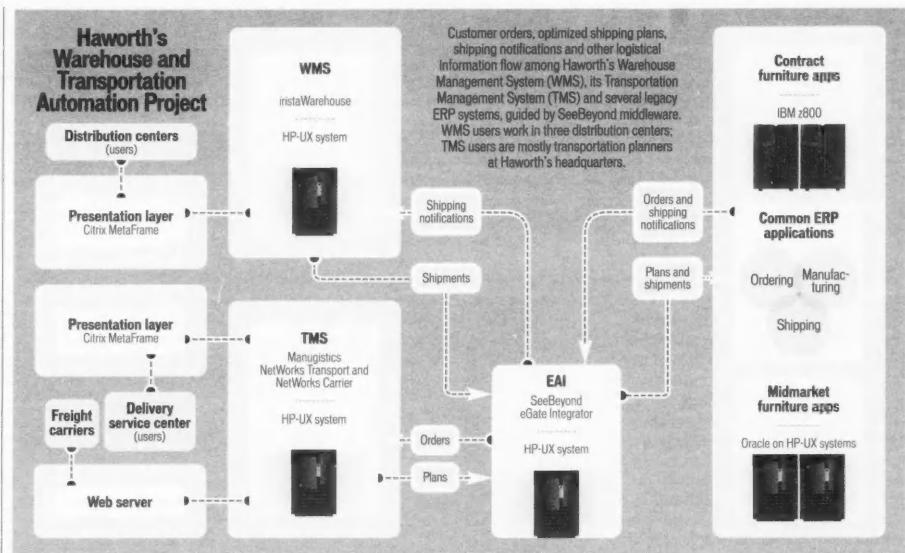
Moon says Haworth was counting on a 12% reduction in freight costs from TMS but is actually seeing 16%. The system paid back the initial investment in nine months — 15 months ahead of schedule. Partial-truckload shipments, which are inefficient and often lead to damaged goods, have been reduced by half. And the labor-cost savings from WMS is "significantly beyond" the 10% to 12% goal, he says.

Middle Ground

TMS and WMS run on Hewlett-Packard Co. Unix servers. They interface with two sets of order entry, manufacturing planning and shipping systems that service two different furniture markets. One is served by an IBM mainframe system and one by an HP Unix system running an Oracle client/server database. To tie the applications on these systems together, Haworth uses eGate Integrator, an enterprise application integration tool from SeeBeyond Technology Corp. in Monrovia, Calif. It passes customer orders, shipping plans and shipping notifications among the applications (see diagram).

The SeeBeyond middleware is crucial because of all the disparate systems Haworth has inherited through acquisitions, Moon says. "It really is the magic. We found that the ability to plug into that black box anywhere you need to — Baan, Oracle, legacy systems and many others working together — has really been a key to success. It's allowed us to move a lot faster than if we'd had to build all these single interfaces."

Another key piece of middleware is MetaFrame virtual user interface soft-



ware from Citrix Systems Inc. in Fort Lauderdale, Fla. That allowed Haworth to move most of the TMS client code from the remote distribution centers to a central Citrix server in Michigan, freeing up network bandwidth and simplifying software-distribution chores.

"The volume of data going back to [TMS] was quite extensive, and if we had to go to local desktops, that would really increase network traffic," says Brian Kovatch, manager of information systems applications design.

The TMS project went smoothly, partly because the system went in with no customizations and partly because Manugistics had two full-time consultants on-site for a year.

WMS was a bit more problematic. "In the case of WMS, there were some performance concerns, and our database administrators worked closely with the Irista people to help them understand where some of the flaws were," Kovatch says. Haworth's staff helped Irista tune some SQL statements that were inappropriately coded, he says, adding that "the vendor wasn't accustomed to our volumes and need for response time." WMS processes some 17,500 transactions per day.

Haworth also considered warehouse management products from Optum Inc. and Provia Software Inc. but stayed with Irista because of "the functionality and their willingness to work with us," says project manager Tim Boak. Asked if Haworth considered developing a system in-house, he says, "I

think the view was that's what we already had."

Jim Rohrer, a business applications process manager and the key liaison between IT and the supply operations at Haworth, says the new systems haven't just optimized business processes; they've also fundamentally transformed them. "The distribution centers were accustomed to getting information on labels or on screens, then deciding what to do with it and then reporting back what they did. I call that a 'signpost' system," he says.

Now it's more of a "directed" system, Rohrer explains. "TMS sets up a plan and feeds it to WMS, and WMS says, 'Here's what's to be done; here's your task list.' It greatly reduces the amount of time it takes a new employee to get productive," he adds.

Additional Payoffs

Senior project leader John Stewart says that while many software vendors have supply chain systems, relatively few of the packages include optimization — the ability to evaluate a huge number of order, carrier and route combinations and come up with the lowest-cost ones.

Haworth looked at five companies and narrowed it down to Manugistics, Optum and i2 Technologies Inc. It chose Manugistics because of its "great references and product features," Stewart says. TMS was able to handle Haworth's complex requirements without a single modification, he notes.

Reductions in freight costs and warehouse labor have been the most easily measured benefits from the new systems, but Haworth has also seen other payoffs. TMS sends carriers "tenders" — requests to bid on a shipment — via electronic data interchange or the Web and gets bids back automatically. That process used to require two phone calls. Now, if an answer isn't received within a specified time, the system automatically tries another carrier, says Lydia Knowles, delivery service center supervisor.

TMS has improved customer service in other, more subtle ways, Knowles says. "One of the major benefits of TMS is the connectivity between the expertise we have in-house and our customer needs," she notes. "Our awareness of cause and effect increased dramatically."

Indeed, says Joseph Bardowski, director of logistics, "visibility and optimization are equally important." Forty percent of the total system benefits can be attributed to things such as the ability to project scheduled shipments further into the future and the ability to get previously unavailable performance metrics out of the system, he says.

© 46857

FACING THE HUMAN FACTOR

Getting users to accept the new system meant keeping them in the loop, from the development phase through final rollout:

QuickLink 46848
www.computerworld.com

THE Cognitive PERSONAL ASSISTANT

BY THOMAS HOFFMAN

AI-BASED SYSTEMS COULD HANDLE ROUTINE ADMINISTRATIVE TASKS.

RESEARCHERS at Carnegie Mellon University are developing a computer-based administrative assistant that draws upon artificial intelligence (AI) techniques to perform routine tasks such as scheduling meetings for busy managers and filtering and prioritizing their e-mail.

One caveat: It won't pick up your dry cleaning.

The project, called Radar (short for Reflective Agent with Distributed Adaptive Reasoning), is being funded by the Defense Advanced Research Projects Agency under a program called PAL, or Personalized Assistant that Learns. DARPA provided the Radar project, which was launched in May 2003, with \$7 million in first-year funding.

"What we're trying to do is build an assistant for any busy manager who's overloaded with requests," says Scott Fahlman, a research professor of computer science at Pittsburgh-based Carnegie Mellon. More than 25 researchers spent Radar's first year focused on things such as teaching the system to classify e-mail and then optimizing its learning algorithms.

According to Fahlman, Radar will handle some routine tasks by itself, ask for a supervisor's confirmation on others and produce suggestions and drafts that its user can accept or modify as needed.

For instance, suppose a manager receives an e-mail from a colleague

requesting some slides. Fahlman and his team are trying to optimize the Radar system to understand the request at a basic level, draft a response and notify the manager with a message like, "Here's my proposed answer; do you accept this?" and then await the manager's response.

Radar isn't intended to act just as an e-mail filtering system, Fahlman says. As a text-in, text-out system, there's "a huge opportunity" for one Radar system to "talk" with another Radar system, schedule meetings and draw information from or post it to a company's Web site, he explains.

But, Fahlman notes, any release of information by Radar is under control of the system's user, who has the last word on the privacy policies to be observed by the automated assistant.

Using AI, Radar will draw on statistical and symbolic learning. Say a manager demonstrates a tendency to deny e-mail requests to hold meetings on Fridays over the course of a few months. Radar will pick up on this pattern and send a message to the manager asking whether the manager prefers to avoid meetings on Fridays. The manager can then respond back to Radar that it should avoid scheduling meetings on Friday mornings but that Friday afternoons are OK, explains Fahlman.

"What we're trying to do is blend the best of both statistical and symbolic learning," he says.

Applying AI to natural-language understanding is hardly a new concept

— researchers have been working on this for at least 25 years, Fahlman notes. But much of the research has centered around problem-solving, and Radar is "trying to move that work forward," he says.

Researchers who work on machine learning "have a number of tools and approaches that can be applied to [understanding] people's social networking skills," says Dan Siewiorek, director of the Human-Computer Interaction Institute at Carnegie Mellon.

Some of the technical challenges that Fahlman and Siewiorek have encountered include trying to provide Radar with a sufficient amount of natural-language understanding. Another challenge, says Fahlman, is equipping Radar to build upon a body of knowledge and programming it to learn from its mistakes over time.

At this point, Radar is being taught to learn through its interaction with text. However, it's possible that Radar could be taught to understand human speech once the project gets further along, notes Siewiorek.

The Radar project "is an interesting concept," says Martin Colburn, chief technology officer at National Association of Securities Dealers Inc. in Rockville, Md. Earlier in his career, Colburn developed mortgage underwriting tools with AI engines that simulated the trade-offs an underwriter makes when looking at underwriting guidelines. "This clearly has some applicability," he says. Colburn adds that the system could be applied to workload management, such as filing, archiving or retrieving documents.

Although Radar is being funded by DARPA for military use, there may also be commercial applications that

Glossary

Statistical learning — An approach to machine intelligence that's based on statistical modeling of data. With a statistical model in hand, one applies probability theory and decision theory to get a learning algorithm.

Machine learning — Acquiring knowledge automatically from source data and other computer-generated information. The most frequently used techniques include symbolic- and inductive-learning algorithms.

Symbolic learning — Automated techniques based on rule learning, learning by being told, learning by analogy, learning from examples and learning from discovery.

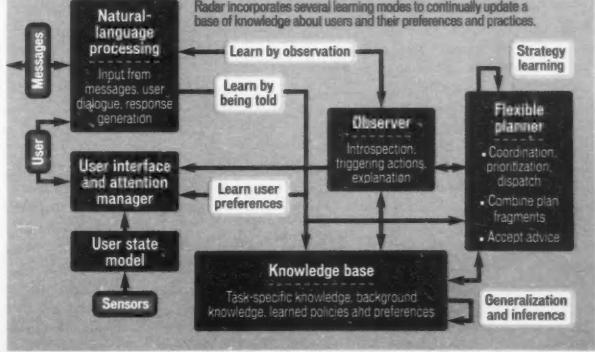
Natural-language processing — Automated analysis, understanding and generation of language that humans use naturally.

SOURCES: CARNEGIE MELLON UNIVERSITY AND THE UNIVERSITY OF ARIZONA

spin off of the research once the project is concluded in the spring of 2008, says Fahlman, who notes that the military and civilian applications are very similar. Although Fahlman is quick to explain that Carnegie Mellon is "not in the business" of packaging commercial applications, he did say that there could be spin-off companies, or other companies could end up licensing the technology.

Siewiorek points out that Radar isn't intended to replace administrative assistants but simply to, um, assist them. Says Siewiorek, "[Human] assistants are limited in their capacity in being able to put a supervisor's whole life together. A machine-based assistant can multitask." ☐ 47065

Radar Learning Architecture



SOURCES: CARNEGIE MELLON UNIVERSITY AND DARPA

Wireless Hackers Leave No Tracks

Unprotected WLANs give hackers an untraceable way to launch attacks across the Internet. By Vince Tuesday

I'M A PARASITE. I didn't pay for the bandwidth I'm using right now. I didn't ask for permission to use it — I don't even know whom to ask. But I'm on holiday, I have a few bits of work to finish up before I can relax, and I need to send my e-mail.

The broadband service in the rented house doesn't work, so I stuck in my wireless LAN card and found two WLANs covering the house. One has a Secure Set Identifier of "lopez" and has Wired Equivalent Privacy turned on; the other has an SSID of "default" and no WEP.

My wireless card has automatically associated with the "default" base station, which gave me a Dynamic Host Configuration Protocol address. Now I'm connected to the Internet at 11Mbit/sec. with no fee and no restrictions on what I can do.

When WLANs hit the mainstream a few years ago, the security focus was on confidentiality, and vendors included WEP to encrypt data in the air. WEP has flaws — it might not stop a snooper in your parking from reading your data — but just the fact that "lopez" had it turned on was enough to turn my attention elsewhere. Why hack "lopez" when "default" is sending in the clear?

But having data snatched from the air isn't the real threat that wireless poses. That problem is easily solved by using cryptography. A bigger worry is "de-perimeterization," which is a fancy way of saying that the walls of the normal fortress model are falling away,

thanks in part to wireless. In the good old days, you inventoried all external connections and put firewalls in front of them. Now, nearly every organization has so many connections to the outside that it isn't feasible to set up firewalls to control access to all of them. If your wireless users need access to all of the internal services, what can you block with a firewall?

And if you're a hacker, why bother trying to intercept data from the traffic flying about when you can just connect to the network and pretend to be a legitimate client? Once you become a full node on the network, you don't have to wait for a client to connect to download the information you want and sniff it. Instead, you can just waltz right in and take what you want. This is a lot less covert, but unless the target has a hair-trigger intrusion-detection system configuration and very good triangulation equipment, you probably won't be discovered.

My company's authorized

Rogue access points in the office are a problem we can solve, but the real WLAN problem that strikes terror into my heart is the home user.

wireless access points have strong authentication, so only legitimate clients can connect, but all our exterior defenses might be for naught if a staff member plugs in a \$99 access point.

To protect against this, my team and I run regular sweeps to check for illegitimate access points that might allow unauthorized users to connect. We had a few early run-ins with staff when we began the sweeps, but now the authorized service is so good that everyone is happier using that than they would be trying to sneak new equipment into the office.

Insecure Access

In these sweeps, we've detected many access points that are transmitting from outside the company walls. It's interesting to see that all the bars and restaurants near our offices have WLANs for waiters to send orders to the kitchen. All are insecurely configured. Perhaps half of those people turn on the Windows XP firewall, but that won't stop an attacker. They just get within range and connect. There's no physical evidence, no closed-circuit TV, and the poor schmuck whose broadband connection gets used is the one whom the feds raid.

So while the WLAN connection I'm using now is helpful to me as I finish up my work while on holiday, someone else could just as easily be using it to launch attacks before disappearing anonymously back into the night.

There's no chance that home users will move to two-factor authentication for their wireless networks, so I'm making sure that my current designs for Web-facing infrastructure don't rely on being able to track down and stop attackers. Clearly, that's no longer possible.

But when I tried to connect to one of the access points, I could get only a printer service Web page. It turned out that our printer vendor had shipped a batch of printers with wireless printing support enabled by default. Each was functioning as a WLAN access point. We disabled the cards and asked the vendor to do the same with future orders.

Rogue access points in the office are a problem we can solve, but the real WLAN problem that strikes terror into my heart is the home user.

Before WLANs, if I were a hacker or virus writer or if I wanted to download or share illegal material, I had limited options. I could use my own account and eventually get caught after the feds tracked the abuse back to me. I could steal an AOL account by phishing until the feds used phone traces to catch me. Or I could wander into a Web cafe, do my evil deeds and flee, leaving closed-circuit TV footage, fingerprints and physical evidence the feds could use to put me behind bars.

With WLANs, things have changed. On most streets in big metropolitan areas, a few people have broadband, and at least one uses it with an insecure wireless connection. Perhaps half of those people turn on the Windows XP firewall, but that won't stop an attacker. They just get within range and connect. There's no physical evidence, no closed-circuit TV, and the poor schmuck whose broadband connection gets used is the one whom the feds raid.

So while the WLAN connection I'm using now is helpful to me as I finish up my work while on holiday, someone else could just as easily be using it to launch attacks before disappearing anonymously back into the night.

There's no chance that home users will move to two-factor authentication for their wireless networks, so I'm making sure that my current designs for Web-facing infrastructure don't rely on being able to track down and stop attackers. Clearly, that's no longer possible.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum: [QuickLink a1590](#). To find a complete archive of our Security Manager's Journals, go online to [computerworld.com/secjournal](#)

SECURITY LOG

Security Bookshelf

■ Secure Architectures With OpenBSD, by Brandon Palmer and Jose Nazario; Addison Wesley, 2004.

OpenBSD is the poster child for secure production operating systems. The team that wrote it takes a paranoid approach to the default configuration. For example, the compiler defaults to include buffer overflow protection in every program compiled.

This code might be one of the safest on the planet, but many OpenBSD advocates come across as wide-eyed and paranoid.

Certainly, most companies will continue to buy less-secure operating systems. But this book might change the minds of a few users who have been put off by OpenBSD's reputation as difficult to master. It's well written by authors who don't seem to suffer the over-the-top passions of other OpenBSD advocates.

This book could be just the thing to turn your computer into a well-protected system. It covers everything from setting up and using the system to developing under OpenBSD — and it had the answer to every question I had when setting up a test OpenBSD system.

—Vince Tuesday

Wireless Security Wake-up Call

A global survey of 100 financial services companies, including 31 of the top 100, drew these answers from respondents:

33% Said they have issued employee guidelines for safe use of WLANs.

45% Said they have scanned networks to detect rogue WLAN access points.

59% Said they have instituted WLAN security policies.

SOURCE: DELOITTE & TOUCHE LLP, 2004





i want to **stop** thinking about the threats that could fill my network,

and **start** thinking about the people that could fill this space.



Start growing your business securely with Intrusion Prevention Solutions from McAfee Security.

With a powerful combination of McAfee® System Protection and Network Protection Solutions, McAfee Security does more than merely detect known and unknown threats—it actually prevents them. From the desktop, to the network, to the server, the McAfee® Protection-in-Depth strategy and our proven Intrusion Prevention technologies provide complete protection for the enterprise. So you can spend less time thinking about security issues and more time thinking about growth issues. Learn more today at start.mcafeesecurity.com.

Because security is not just about what you can stop.

Network Associates, McAfee, and Protection-in-Depth are registered trademarks or trademarks of Network Associates, Inc. and/or its affiliates in the US and/or other countries. All other registered and unregistered trademarks herein are the sole property of their respective owners. © 2002 Network Associates Technology, Inc. All Rights Reserved.

Network Associates

BRIEFS**Recursion Readies App Dev Platform**

Recursion Software Inc. in Frisco, Texas, last week announced Cinergi, a multilingual application development platform. Cinergi allows software architects to select functionality from applications written in Java, C++, .Net, CORBA or SOAP/XML and integrate that functionality into new applications written in Java, C++, or .Net without rewriting code, according to the company. The product will be available June 29. Pricing information wasn't available.

Maximo Nuclear Manages Assets

MRO Software Inc. in Bedford, Mass., has introduced Maximo Nuclear, an asset management system for the nuclear power industry. Maximo Nuclear supports work, asset and supply chain management processes and runs on all major operating systems, the company said. An average implementation costs \$500,000 to \$650,000, according to an MRO spokesman.

AT&T Adds DDoS Protection Service

AT&T Corp. last week announced a new service feature called DDoS Defense for its AT&T Internet Protect service. The DDoS Defense option provides real-time attack mitigation, stopping denial-of-service and distributed DoS attack traffic floods before they reach a customer, the company said. Pricing wasn't announced.

Caelo Releases E-mail Organizer

Caelo Software Inc. in Vancouver, British Columbia, has released Nelson E-mail Organizer Pro 3 for Microsoft Outlook. The latest version automates e-mail organization using advanced workflow methods, according to Caelo. Pricing starts at \$69.95 per seat.

PAUL A. STRASSMANN

Pentagon Devises Innovative IT Strategy

IN A TALK IN MARCH, John Chambers, the knowledgeable CEO of Cisco Systems, noted that the U.S. Department of Defense is emerging as a pioneer in systems architectures. The DOD has become an innovator in supporting real-time responsiveness across an enterprise.

Noteworthy is the technology guidance from Deputy Secretary of Defense Paul Wolfowitz and the just-retired DOD CIO John Stenbit. They proposed strategies to cope with the war on terrorism as the DOD finds itself saddled with a computing and telecommu-

nations infrastructure that consumes over half of the department's IT resources [QuickLink 40856]. The DOD doesn't have sufficient capabilities to meet rising operational requirements. Just about all of its assets are mortgaged to keep the existing systems running. Only a radical transformation, now defined as the Global Information Grid (GIG), can offer a viable way to achieve real-time interoperability among defense systems.

Suppliers and contractors are replacing obsolete technologies with lower-cost products and services, but that won't yield sufficient funds to pay for urgently needed innovations. There isn't enough time to gradually swap old technologies for new ones, as has been the practice for half a century. New needs can be satisfied only by speedy changes in the ways systems are designed and operated.

The DOD is stuck with the fixed costs to support well over \$1 trillion worth of accumulation from mainframe- and desktop-centric acquisitions. To escape that bondage and confront rapidly rising threats to our security, the DOD has come up with an architecture that meets the new requirements at materially lower costs. It's an architecture that makes it possible to migrate rapidly without the



PAUL A. STRASSMANN
(pastr@strassmann.com)
once served as the director of Defense Information. The GIG plans - at least on paper - look like dreams that ought to come true.

resulting chaos seen in the efforts to modernize information systems for the Navy and the Marine Corps.

The objective of the GIG is to move all DOD applications from the current broadcast, point-to-point and interapplication communications to a virtual and secure, enterprise-wide ultra-wideband bus. It's based on the operating doctrine of "posting information and knowledge for real-time availability" by means of "universal data-element-level interoperability."

This is quite a mouthful, but it means that the GIG will (1) support the entry of data to readily accessible files as early as possible, and preferably at the point of origin; (2) provide users with the improved capability to pull whatever data they need, whenever they need it; and (3) ensure that information security measures are applied at every point of entry and exit from the GIG.

The central capability of the GIG will be to deliver Six Sigma-quality secure messaging, collaboration, services management, content assurance, knowledge discovery and enterprise-wide archiving services. The GIG will provide visibility, access and delivery of information services to all of the DOD as well as to others engaged in national security. It will

enable authorized and individually authenticated persons to search the networks for information services.

The GIG represents a fundamental shift to a service-oriented view of what an information infrastructure must make feasible. It requires a dedicated and fully assured network environment, populated with information that's readily available, secure, reliable and scalable on demand — not just as specified in budget estimates. To the extent possible, the GIG will use existing applications via standard middleware gateways for eventual migration of all information assets into the GIG architecture.

The Pentagon accumulated incompatible hardware and noninteroperable software because it relied on obsolete assumptions about technology acquisitions. To save money as it moves to its GIG architecture, the DOD must take a new approach that involves the following steps:

- Substitute communications bandwidth for computing hardware.
- Rely on standardized data in lieu of costly integration of unique data. All data will have associated metadata to help users discover the utility of shared data.
- Replace wired networks with wireless connectivity.
- Eliminate application-specific architectures for enterprise-wide grid systems.
- Eliminate on-site support for fixing hardware and software by using preventive remote diagnostics.
- Apply middleware interfaces to deal with nonstandard data definitions.
- Implement perimeter security instead of relying on local security.

The GIG architecture is a breakthrough in thinking about all information infrastructures. It's worthy of consideration by every CIO, whether in business or in government. The development of the GIG warrants watching because it's based on an approach that applies to all who depend on information superiority to compete. **47255**

WANT OUR OPINION?

For more columns and links to our archives, go to www.computerworld.com/opinions

MANAGEMENT

06.07.04

Think Tank

Legal services for IT contracts may be the next function moving offshore; plus, ups and downs among software vendors and best bits of recent IT management books. **Page 48**



OPINION Getting to Done

You can't complete an IT project successfully if you haven't defined success, says Paul Glen. He suggests that project managers think beforehand about how they'll know when the job is done. **Page 52**



WITH TECHNOLOGY costs representing more than half of all capital expenditures at many companies, CxOs are pressuring IT managers to more closely measure returns on technology investments.

"For the average company, one out of every 50 revenue dollars is being spent on an IT project, and someone is going to watch it," says Howard Rubin, executive vice president at Meta Group Inc. But while some companies have taken steps to teach IT managers how to understand and even apply financial calculations such as internal rate of return (IRR) and net present value (NPV), many others haven't, and the financial acumen of tech managers is all over the map.

"Probably 80% of the companies I work with are using financial techniques" such as NPV, says Barbara Gomolski, an analyst at Gartner Inc. and a *Computerworld* columnist. She estimates that half of the midlevel IT managers at those companies have received some financial training, and the rest are assisted by their finance or accounting divisions.

BY THE NUMBERS

Among Fortune 1,000 IT leaders surveyed:

82% say estimating IT benefits is a major challenge.

68% don't track project benefits.

74% don't track actual financial metrics after making an investment decision.

46% say IT staffers lack sufficient working knowledge of financial concepts.

89% don't use earned value to track project success.

46% say they lack good metrics for measuring value.

28% say they lack staff and resources to gather and analyze data.

BRIDGING THE FINANCIAL SKILLS GAP

Some companies are teaching IT managers how to calculate the financial payoff of IT projects. But there's lots of room for improvement. **BY THOMAS HOFFMAN**

But Mark Cottleer, an assistant professor of management at Marquette University in Milwaukee, says financial training for IT managers isn't widespread at all, and companies often rely on vendors to calculate return on investment.

"I hardly think that's the most appropriate way to do it, since [vendors] have a vested interest to make sure the right answer comes out at the other end," says Cottleer, who is also a consultant at Arlington, Mass.-based Cutter Consortium.

An ongoing survey of 180 IT executives from Fortune 1,000 companies that has been conducted since November 2002 reveals that 46% of IT staffs lack a basic working knowledge of financial concepts.



RED MORE STUDIO

BRIEFS**Recursion Readies App Dev Platform**

Recursion Software Inc. in Frisco, Texas, last week announced Cinergi, a multilanguage application development platform. Cinergi allows software architects to select functionality from applications written in Java, C++, .Net, CORBA or SOAP/XML and integrate that functionality into new applications written in Java, C++, or .Net without rewriting code, according to the company. The product will be available June 29. Pricing information wasn't available.

Maximo Nuclear Manages Assets

MRO Software Inc. in Bedford, Mass., has introduced Maximo Nuclear, an asset management system for the nuclear power industry. Maximo Nuclear supports work, asset and supply chain management processes and runs on all major operating systems, the company said. An average implementation costs \$500,000 to \$650,000, according to an MRO spokesman.

AT&T Adds DDoS Protection Service

AT&T Corp. last week announced a new service feature called DDoS Defense for its AT&T Internet Protect service. The DDoS Defense option provides real-time attack mitigation, stopping denial-of-service and distributed DoS attack traffic floods before they reach a customer, the company said. Pricing wasn't announced.

Caelo Releases E-mail Organizer

Caelo Software Inc. in Vancouver, British Columbia, has released Nelson E-mail Organizer Pro 3 for Microsoft Outlook. The latest version automates e-mail organization using advanced workflow methods, according to Caelo. Pricing starts at \$69.95 per seat.

PAUL A. STRASSMANN

Pentagon Devises Innovative IT Strategy

IN A TALK IN MARCH, John Chambers, the knowledgeable CEO of Cisco Systems, noted that the U.S. Department of Defense is emerging as a pioneer in systems architectures. The DOD has become an innovator in supporting real-time responsiveness across an enterprise.

Noteworthy is the technology guidance from Deputy Secretary of Defense Paul Wolfowitz and the just-retired DOD CIO John Stenbit. They proposed strategies to cope with the war on terrorism as the DOD finds itself saddled with a computing and telecommu-

nications infrastructure that consumes over half of the department's IT resources [QuickLink 40856]. The DOD doesn't have sufficient capabilities to meet rising operational requirements. Just about all of its assets are mortgaged to keep the existing systems running. Only a radical transformation, now defined as the Global Information Grid (GIG), can offer a viable way to achieve real-time interoperability among defense systems.

Suppliers and contractors are replacing obsolete technologies with lower-cost products and services, but that won't yield sufficient funds to pay for urgently needed innovations. There isn't enough time to gradually swap old technologies for new ones, as has been the practice for half a century. New needs can be satisfied only by speedy changes in the ways systems are designed and operated.

The DOD is stuck with the fixed costs to support well over \$1 trillion worth of accumulation from mainframe- and desktop-centric acquisitions. To escape that bondage and confront rapidly rising threats to our security, the DOD has come up with an architecture that meets the new requirements at materially lower costs. It's an architecture that makes it possible to migrate rapidly without the

resulting chaos seen in the efforts to modernize information systems for the Navy and the Marine Corps.

The objective of the GIG is to move all DOD applications from the current broadcast, point-to-point and interapplication communications to a virtual and secure, enterprise-wide ultrawideband bus. It's based on the operating doctrine of "posting information and knowledge for real-time availability" by means of "universal data-element-level interoperability." This

is quite a mouthful, but it means that the GIG will (1) support the entry of data to readily accessible files as early as possible, and preferably at the point of origin; (2) provide users with the improved capability to pull whatever data they need, whenever they need it; and (3) ensure that information security measures are applied at every point of entry and exit from the GIG.

The central capability of the GIG will be to deliver Six Sigma-quality secure messaging, collaboration, services management, content assurance, knowledge discovery and enterprise-wide archiving services. The GIG will provide visibility, access and delivery of information services to all of the DOD as well as to others engaged in national security. It will

enable authorized and individually authenticated persons to search the networks for information services.

The GIG represents a fundamental shift to a service-oriented view of what an information infrastructure must make feasible. It requires a dedicated and fully assured network environment, populated with information that's readily available, secure, reliable and scalable on demand — not just as specified in budget estimates. To the extent possible, the GIG will use existing applications via standard middleware gateways for eventual migration of all information assets into the GIG architecture.

The Pentagon accumulated incompatible hardware and noninteroperable software because it relied on obsolete assumptions about technology acquisitions. To save money as it moves to its GIG architecture, the DOD must take a new approach that involves the following steps:

- Substitute communications bandwidth for computing hardware.
- Rely on standardized data in lieu of costly integration of unique data. All data will have associated metadata to help users discover the utility of shared data.
- Replace wired networks with wireless connectivity.
- Eliminate application-specific architectures for enterprise-wide grid systems.
- Eliminate on-site support for fixing hardware and software by using preventive remote diagnostics.
- Apply middleware interfaces to deal with nonstandard data definitions.
- Implement perimeter security instead of relying on local security.

The GIG architecture is a breakthrough in thinking about all information infrastructures. It's worthy of consideration by every CIO, whether in business or in government. The development of the GIG warrants watching because it's based on an approach that applies to all who depend on information superiority to compete. **G 47255**

WANT OUR OPINION?

For more columns and links to our archives, go to www.computerworld.com/opinions



PAUL A. STRASSMANN
(paul@strassmann.com)
once served as the
director of Defense
information. The GIG
plans - at least on paper
- look like dreams
that ought to come true.

MANAGEMENT

06.07.04

Think Tank

Legal services for IT contracts may be the next function moving offshore; plus, ups and downs among software vendors and best bits of recent IT management books. **Page 48**



OPINION Getting to Done

You can't complete an IT project successfully if you haven't defined success, says Paul Glen. He suggests that project managers think beforehand about how they'll know when the job is done. **Page 52**



WITH TECHNOLOGY costs representing more than half of all capital expenditures at many companies, CxOs are pressuring IT managers to more closely measure returns on technology investments.

"For the average company, one out of every 50 revenue dollars is being spent on an IT project, and someone is going to watch it," says Howard Rubin, executive vice president at Meta Group Inc. But while some companies have taken steps to teach IT managers how to understand and even apply financial calculations such as internal rate of return (IRR) and net present value (NPV), many others haven't, and the financial acumen of tech managers is all over the map.

"Probably 80% of the companies I work with are using financial techniques" such as NPV, says Barbara Gomolski, an analyst at Gartner Inc. and a Computerworld columnist. She estimates that half of the midlevel IT managers at those companies have received some financial training, and the rest are assisted by their finance or accounting divisions.

But Mark Cottelleer, an assistant professor of management at Marquette University in Milwaukee, says financial training for IT managers isn't widespread at all, and companies often rely on vendors to calculate return on investment.

"I hardly think that's the most appropriate way to do it, since [vendors] have a vested interest to make sure the right answer comes out at the other end," says Cottelleer, who is also a consultant at Arlington, Mass.-based Cutter Consortium.

An ongoing survey of 180 IT executives from Fortune 1,000 companies that has been conducted since November 2002 reveals that 46% of IT staffs lack a basic working knowledge of financial concepts.

BY THE NUMBERS

Among Fortune 1,000 IT leaders surveyed:

82% say estimating IT benefits is a major challenge.

68% don't track project benefits.

74% don't track actual financial metrics after making an investment decision.

46% say IT staffers lack sufficient working knowledge of financial concepts.

89% don't use earned value to track project success.

46% say they lack good metrics for measuring value.

28% say they lack staff and resources to gather and analyze data.

BRIDGING FINANCIAL SKILLS GAP

Some companies are teaching IT managers how to calculate the financial payoff of IT projects. But there's lots of room for improvement. **BY THOMAS HOFFMAN**



SOURCE: 2002 SURVEY OF 180 FORTUNE 1,000 IT LEADERS BY THE KELLOGG SCHOOL OF MANAGEMENT AT NORTHWESTERN UNIVERSITY AND DIAMONDCLUSTER INTERNATIONAL INC.

GLOSSARY

Here's how the Kellogg School at Northwestern University defines financial terms in its 2003 white paper, "IT Portfolio Management":

RETURN ON INVESTMENT (ROI)

The total quantitative savings or return in hours, dollars or other measurable units, generated by an improvement effort, divided by the total cost of that effort.

NET PRESENT VALUE (NPV)

The sum of the discounted cash flows expected from a business project, less the investment amount. The cash flows are discounted at the company's cost of capital. In theory, projects with NPV greater than zero should be funded.

INTERNAL RATE OF RETURN (IRR)

The compounded annual growth rate of a project's net cash flows. In theory, a proposal with an IRR greater than the cost of capital should be accepted.

Mark Jeffery is an assistant professor of technology at the Kellogg School of Management at Evanston, Ill.-based Northwestern University, which is running the study. He says companies that invest in training IT managers in financial know-how tend to generate higher returns on their technology investments and have better controls in place than their peers. "Firms that are good at what they do invest in their people to improve their financial skills," says Jeffery.

Some companies, such as Wachovia Corp., have been providing financial training to IT managers for years. Since

the late 1990s, the Charlotte, N.C.-based financial services company has required IT and other managers to apply NPV and break-even calculations to all investments greater than \$250,000, says Ginny Hartsema, chief financial officer for operations, IT and e-commerce. "We believe that financial management is a key competency [for] managers," she says. "It isn't sufficient for them to be technically capable and not be able to grasp financial principles."

Wachovia provides managers with formal training from its corporate finance group as well as more detailed training from Hartsema's group. Wachovia also plans to roll out a set of training modules by midyear with tutorials that range from understanding corporate earnings and revenue figures to creating accurate financial project estimates, says Hartsema.

Top 40

At Dublin, Ohio-based Cardinal Health Inc., IT managers use a list of 40 top priorities to ensure that a project is staying on track and aligned with the business. One of those priorities is that a project is meeting its financial targets. The IT division at the \$50 billion-plus provider of health care products and services created a business-integration group three years ago that works with departments such as sales and purchasing to create a business case for each IT project and to determine the best way to measure it, says Steve Peale, vice president of IT.

Members of Cardinal Health's business integration group, which now numbers 40 people, have attended seminars and received 520 hours of

HIGH-STAKES IT INVESTMENTS

ONE COMPANY RECOGNIZED as a leader in IT financial management is Harrah's Entertainment Inc. Ten years ago, the Las Vegas-based casino operator established an IT business office composed of finance and accounting professionals who manage the company's portfolio of IT projects and its day-to-day IT operations [QuickLink 46150].

The office works with application development and support teams to build detailed annual project budgets and monitor performance against those budgets monthly. It also works with Harrah's capital committee to embed NPV and IRR calculations and systematically monitor IT investments, says Heath Daughtrey, vice president of IT services.

In addition, the company is increasingly applying return on invested capital as a barometer of how its IT investments are faring. "We focus on return on invested capital as a key performance indicator when evaluating investment decisions," Daughtrey says.

At Harrah's, much of the training for its 275-person corporate IT staff has been focused on its portfolio management techniques, says Daughtrey. "At the core of portfolio management is whether you're working on the right stuff," he explains. That's not just about measuring

whether an IT project is meeting its financial targets but also determining its impact on operations continuously, he says.

Last summer, Harrah's created a Financial Management 101-type course for staffers who have financial responsibilities, as well as new IT hires. The half-day session familiarizes IT workers with how Harrah's IT group accounts for and manages its IT operations, sets and monitors project budgets, and does accounting. It teaches them how to read financial statements "and walks through many of the core financial and accounting concepts that we use," says Daughtrey.

One of the ways Harrah's measures the effect of its IT financial training is through efficiencies in its own annual IT budgeting process. The bottom-up data-gathering and development of the annual plan used to take two months to complete, says Daughtrey. Last year, the collection of all of the core data took one to two weeks. "That's the best annual planning cycle we've ever had," he adds.

Moreover, by incorporating detailed monthly and quarterly financial reviews of its IT financial performance, Harrah's was able to bring its 2003 IT operating results to almost 0.4% under the approved operating budget, says Daughtrey.

- Thomas Hoffman

business-case and ROI training over the past two years. The group initially consisted of business people who were interested in learning technology, Peale explains. "As we've grown the group, we hired a number of people with technology management skills who knew how to present a business case," he says.

To help measure the success of its financial training, Cardinal Health tracks whether IT projects are on time and within budget. In addition, the company gauges the number of projects that have been launched without help from the business integration group, a figure that's practically down to zero, says Peale.

Hedging Bets

For the past 18 months, IT managers at Uncasville, Conn.-based Mohegan Sun Casino have received instruction from the organization's financial consultants on understanding IRR, NPV and ROI calculations, but it's the finance staff that does the actual number-crunching on IT projects, says Dan Garrow, CIO

and senior vice president of information systems. "I want the objective evaluation of IT from finance," he explains.

Although Garrow says the company's 124 IT workers have improved their ability to accurately estimate project cost savings, it's too early to effectively quantify their success. "We also need to do a better job of following up and measuring whether forecasts have hit their targets," he says. "Many times, it's difficult to get back to projects you've implemented when you've got four or five projects waiting to be started. There's almost no downtime to give us that time to measure."

In the end, says Wachovia's Hartsema, financial training for IT managers can only go so far if you don't have the right corporate culture in place to support it.

"You can train all day long," she says, "but if [senior] management isn't focused on having a culture that ensures appropriate focus on financial management, I don't think you can be successful." **Q 46832**





HP Integrity servers are taking off, as are the companies using them.

Companies adopting HP Integrity servers, powered by industry-leading Intel Itanium 2 processors, are seeing remarkable gains in performance.

The momentum is building. One after another, companies are choosing HP Integrity servers. Leading software and technology partners such as BEA, Microsoft, Oracle, SAP and Siebel Systems have embraced the platform as an industry standard. And with the ability to manage a mixed environment of UNIX, Microsoft® Windows®, Linux and OpenVMS, HP Integrity servers are fast becoming the ultimate consolidation tool. Demand maximum performance, reliability and cost-efficiency now, on a platform that will carry you forward into the future. Demand performance that's real-world proven, and get it—with HP Integrity server solutions.

See who's choosing
HP Integrity servers
and choosing results.

AIRBUS UK

COMPUSA

FIAT AUTO

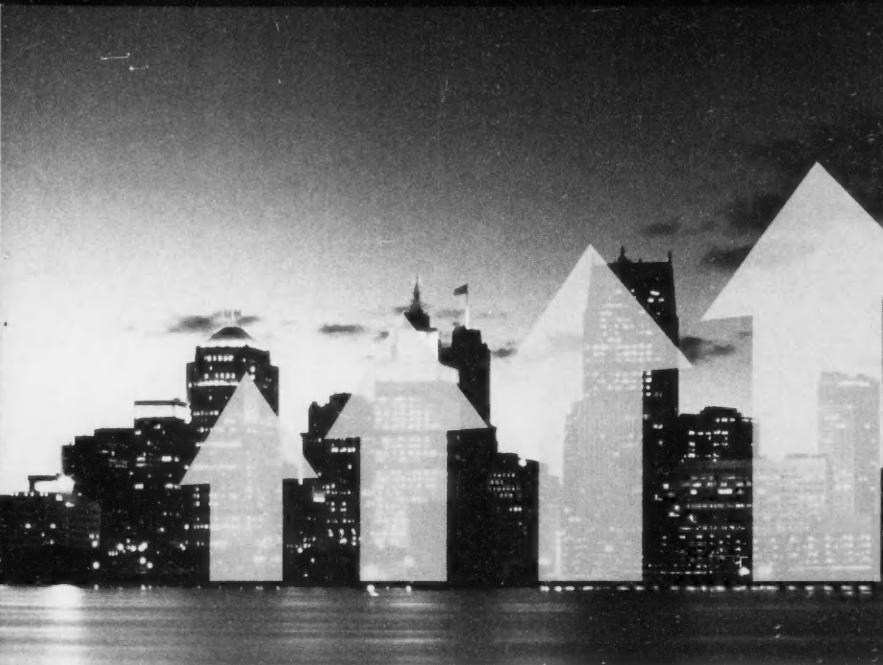
THE KOEHLER GROUP

RAYMOND JAMES



To get the IDC white paper outlining the performance of HP Integrity servers with Intel Itanium 2 processors, go to hp.com/go/demandIntegrity12 or call 1-800-282-6672, option 5, mention code AQHF.

Intel, Intel Inside, the Intel Inside Logo and Itanium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation. ©2004 Hewlett-Packard Development Company, L.P.



HP Integrity servers are taking off, as are the companies using them.

Companies adopting HP Integrity servers, powered by industry-leading Intel® Itanium® 2 processors, are seeing remarkable gains in performance.

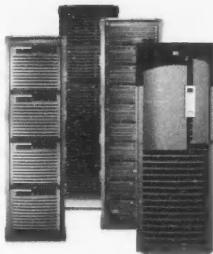
The momentum is building. One after another, companies are choosing HP Integrity servers.

Leading software and technology partners such as BEA, Microsoft®, Oracle, SAP and Siebel Systems have embraced the platform as an industry standard. And with the ability to manage a mixed environment of UNIX, Microsoft® Windows, Linux and OpenVMS, HP Integrity servers are fast becoming the ultimate consolidation tool. Demand maximum performance, reliability and cost-efficiency now, on a platform that will carry you forward into the future. Demand performance that's real-world proven, and get it—with HP Integrity server solutions.



To get the IDC white paper outlining the performance of HP Integrity servers visit hp.com/go/demandIntegrity12 or call 1-800-282-6672, option 5, m.

Intel, Intel Inside, the Intel Inside Logo and Itanium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation. ©2004 Hewlett-Packard Development Company, L.P.



HP INTEGRITY SERVER FAMILY



ers with Intel Itanium 2 processors,
5, mention code AQHF.

Choosing HP Integrity servers, choosing results.

AIRBUS UK:

Running HP-UX11i
on HP Integrity servers,
20-30 wing design
simulations that used
to take weeks are
now done overnight.

COMPUSA:

Going with 64-bit
architecture using HP
Integrity servers, they cut
access time to inventory
data by up to 85%.

FIAT AUTO:

Standardizing on 64-bit
infrastructure using HP
Integrity servers, they're
integrating and enhancing
sales and service as well
as streamlining the buying
process while lowering
sales cost!

THE KOEHLER GROUP:

Moving to an environment
composed of HP Integrity
servers, they gained a 50%
improvement in mission-
critical performance.

RAYMOND JAMES:

Deploying HP Integrity
servers, this financial
advisory company is
showing a five-fold
performance increase
over their previous
32-bit systems.

thinkTank

BRAIN FOOD FOR IT EXECUTIVES

Even IT Legal Work Is Headed Offshore

LEGAL SERVICES for IT contracting may be the next function to move offshore, according to an attorney whose boutique technology law firm is engaged in setting up a service in India.

"IT contracts are integrally related to IT, and I have found that I am preaching to the choir when I discuss this cost-saving initiative with CIOs who have experienced the benefits of offshoring," says Larry Thomas, a partner at Thomas & Opp PA in Minneapolis.

Services would include a majority of the work involved in drawing up contracts for the purchase of software and hardware, as well as agreements for consulting, application service providers, software develop-



GETTY IMAGES

ment and, yes, even outsourcing.

Thomas plans to train Indian MBAs and technical workers in all aspects of IT contracting and have them do the bulk of the work at a fraction of the cost of a well-trained U.S. paralegal, with high-priced attorneys merely reviewing and fine-tuning the work. Quality and turnaround time will improve, and costs can be cut by at least 50%, compared with internal contracting operations, he says.

The concept is already being tested at General Electric Co., where a captive company in India has been handling various procurement functions, including, most recently, IT contracting. But GE spokesman Peter Stack says the process of offshoring IT legal work is still in the experimental stage, and he wouldn't comment on the success of the effort.

- Kathleen Melymuka

Best Bits

The most useful parts of recent IT management and business books.



THE BOOK: Heads Up: How to Anticipate Business Surprises and Seize Opportunities
First, by Kenneth G. McGee (Harvard Business School Press, 2004).

Given that the author is a Gartner Inc. analyst, there was a danger that this book would just be a marketing vehicle for Gartner's well-worn spiel about "the real-time enterprise." Fortunately, the book is deeper than that. McGee's premise is that business surprises (such as serious revenue shortfalls) really shouldn't be surprises at all, because there are always warning signs: information nuggets that either arrived too late or were ignored. McGee — appalled that companies still make strategic plans based on last year's market-share numbers — envisions a world in which sales executives see revenue the

moment it's recorded and managers see daily profit-and-loss statements.

Managers may rightfully worry that this pitch for real-time information will only make the current infoglut worse. But the book provides a methodology for selecting only those high-value information streams that are truly worth monitoring. McGee also suggests a new position of "chief monitoring officer," but maybe today's high-prize CEOs ought to do that work themselves. — Mitch Betts

Selling to the CIO

Everyone knows the No. 1 rule for selling IT stuff is to understand the CIO's problems and try to solve them — right? CIOs say enterprise software salespeople know their own products, but less than 15% of the sellers are rated as excellent at understanding the buyer's requirements and needs, according to a study by analysts at Stratagem Marketing Inc. in Herndon, Va.

Another key factor in making the sale is CIO confidence that the vendor will support the product afterward.

Stratagem says. As Eric Goldfarb, CIO at Atlanta-based PRG-Schultz International Inc., recently put it in an online essay [QuickLink 44490], "Over the course of implementing products or software, something's bound to break. The salesperson who stands by me over the years and doesn't run away at the first sign of trouble is going to be successful." **47063**

Benchmarks

Benchmarking, in which companies compare themselves against their role models, is essentially a quest to find the best practices for a particular business process. These are the most commonly benchmarked functions:

1. Information systems
2. Customer service/satisfaction
3. Employee development/training
4. Human resources
5. Knowledge management

SOURCE: THE BENCHMARKING EXCHANGE, APTOS, CALIF., MAY 2004

GOT ANY BRIGHT IDEAS? Send them to pitches@computerworld.com.

The IT Economy

■ **Canadian IT spending** will grow 3% this year, led by government spending, according to Forrester Research Inc. The slower Canadian economic recovery means that IT spending growth will lag that of the U.S. by one or two quarters. Canadian government spending is strong because of e-government initiatives and the replacement of antiquated systems, Forrester says.

■ **Spending on offshore business process outsourcing** is expected to reach \$3 billion this year, a 65% increase from the 2003 total of \$1.3 billion, according to Gartner.

Ups & Downs

Which software providers are gaining or losing a share of your IT spending dollars?

GAINING

1. Red Hat Inc.
2. Symantec Corp.
3. Mercury Interactive Corp.
4. SAP AG
5. Microsoft Corp.

LOSING

Computer Associates International Inc.

BASE: 100 IT MANAGERS AT FORTUNE 1,000 COMPANIES

SOURCE: THE GOLDMAN SACHS GROUP INC., NEW YORK, MAY 2004

Retail E-commerce Growth Rate

Retail e-commerce still amounts to only 1.9% of overall U.S. retail spending. But online sales are growing faster than total sales.

01 2003 - 01 2004

E-commerce sales growth rate

28.1%

Total sales growth rate

8.8%

SOURCE: U.S. DEPARTMENT OF COMMERCE, MAY 2004

NOTE: Tech-Economy.org has discontinued the monthly IT confidence index previously published here.

NEW! Expertise

Latest industry analysis
and overview

NEW! Solutions

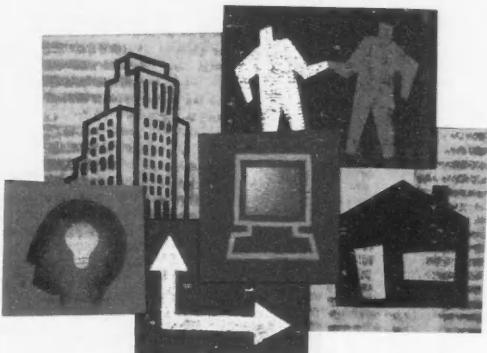
In-depth partner presentations

NEW! Insight

Real-world roundtable
with your colleagues

NEW! Takeaways

Put-to-work answers
and technology



FREE EVENT FOR
QUALIFIED PROFESSIONALS



MODERATOR
James E. Gaskin

YOU'LL SEE TECHNOLOGY IN ACTION:

- ▶ hardware VPNs vs. software VPNs
- ▶ firewalls for remote sites the latest in authentication
- ▶ SOHO tools applicable for remote offices
- ▶ remote backup and restore tools
- ▶ remote office disaster recovery solutions
- ▶ remote voice over IP
- ▶ workgroup collaboration and team projects
- ▶ the best of remote support options

WHO WILL BE THERE?

- ▶ Expert Event Leaders
- ▶ James E. Gaskin, Author, Columnist, Adviser
- ▶ Toni Kistner, Managing Editor for Network World

and professionals who must implement,
integrate and manage remote office networks:

- ▶ CIOs/CSOs/CTOs
- ▶ VPs/Directors of Networking
- ▶ Network Managers
- ▶ Business Line Managers
- ▶ Small Business Owners

This event is limited to Network and IT professionals involved in the evaluation, purchase and implementation of remote office networks. Network World Events reserves the right to determine total audience and profile of complimentary attendees. Paid registration is also available.

Ask IT managers and they say:

- “Branch offices, telecommuters and mobile workers create security nightmares.”
- “Never-ending expenses.”
- “User-management headaches.”

Corporate, however, tells a different story:

- “Remote office networks are our fastest-growing need.”
- “A crucial competitive edge.”
- “The future of the enterprise.”

How can network managers meet the business demand and avoid the downside? Balance costs with benefits? Protect data and profits too? Attend **Remote Office Networking: Central to Success**, a breakthrough Network World Technology Tour Event. It's where you'll see solutions that integrate far-flung networks with your core network architecture.

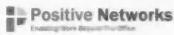
Advance Reservation by Qualified Professionals is Required for Complimentary Attendance

Register now at www.nwfusion.com/ROS4ACW
or call 1-800-643-4668

PLATINUM PRESENTING SPONSORS:

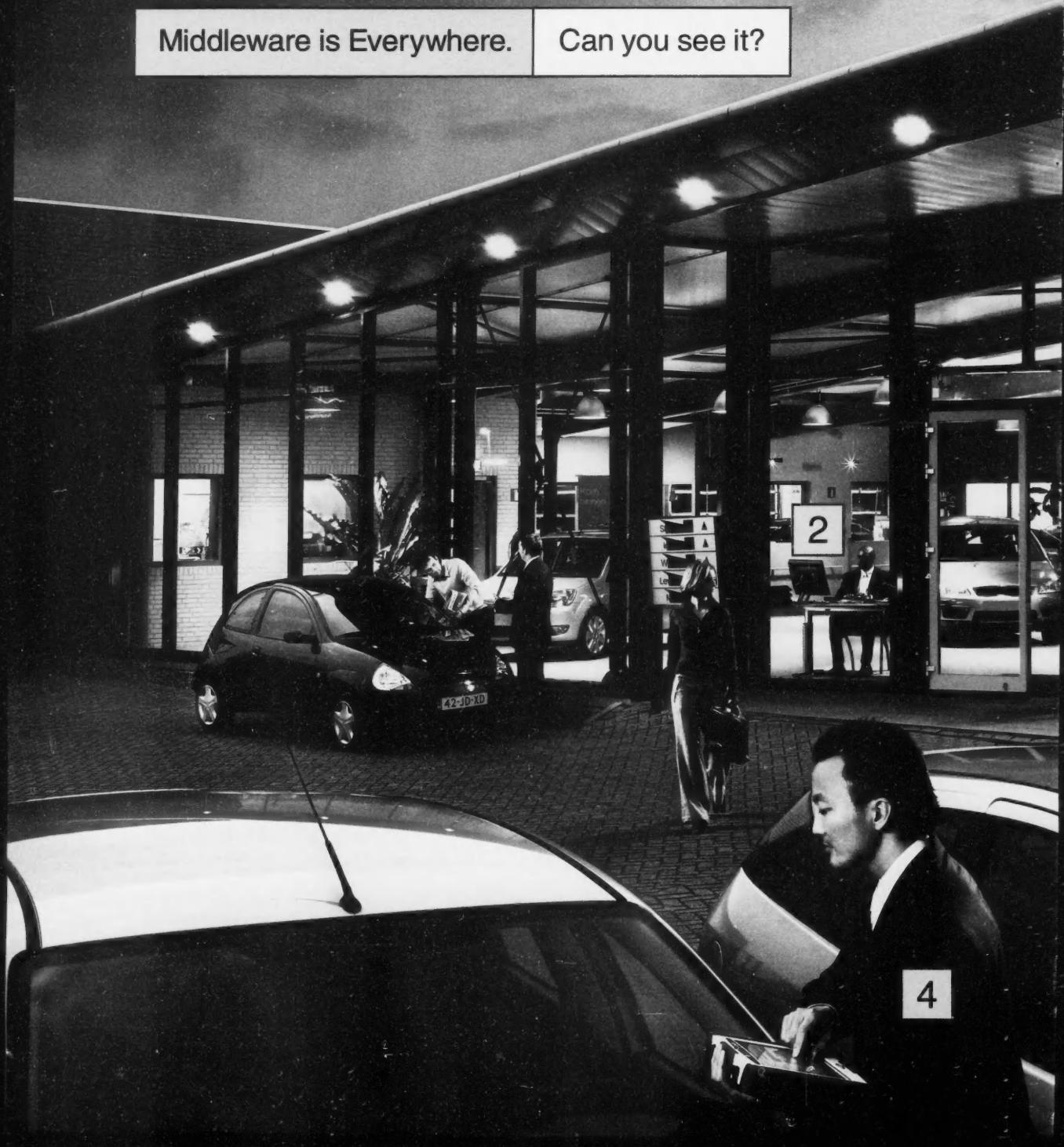


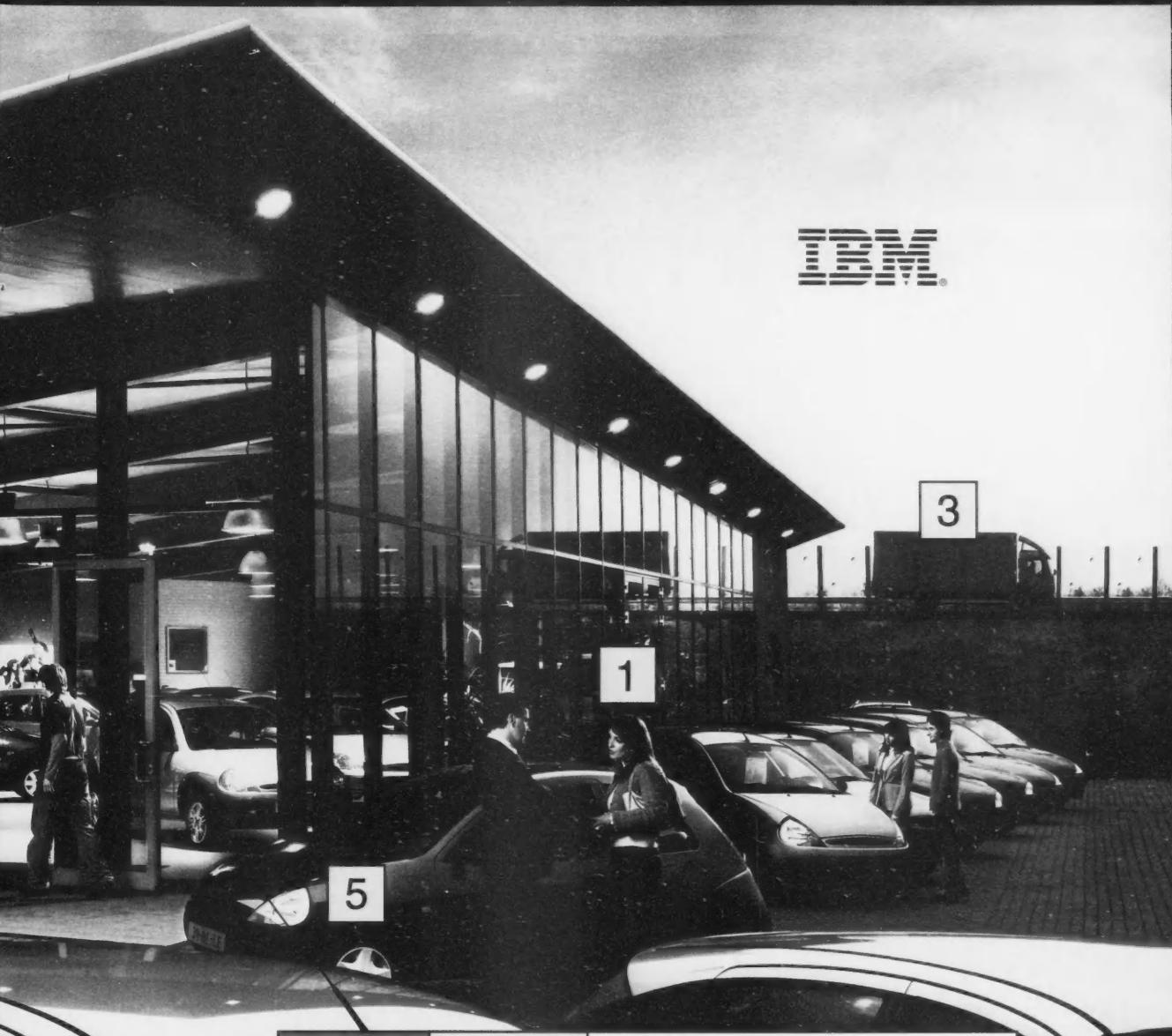
GOLD EXHIBITING SPONSOR:



Middleware is Everywhere.

Can you see it?





IBM

Middleware	Key
1. Car notifies owner for service. 2. Factory informed immediately. 3. Supplier ships parts instantly. 4. Dealer inventory adjusts in real time. 5. Car back on road in no time.	MIDDLEWARE IS IBM SOFTWARE. Powerful software like DB2® and WebSphere® that can connect your business end-to-end. You can build upon your existing applications, creating a responsive environment where partners, vendors and customers can easily work together. And IBM software is based entirely on open standards for maximum efficiency, flexibility, speed and agility. That's ON DEMAND BUSINESS.

- 1. Car notifies owner for service.**
- 2. Factory informed immediately.**
- 3. Supplier ships parts instantly.**
- 4. Dealer inventory adjusts in real time.**
- 5. Car back on road in no time.**

MIDDLEWARE IS IBM SOFTWARE. Powerful software like DB2® and WebSphere® that can connect your business end-to-end. You can build upon your existing applications, creating a responsive environment where partners, vendors and customers can easily work together. And IBM software is based entirely on open standards for maximum efficiency, flexibility, speed and agility. That's ON DEMAND BUSINESS.

See how middleware works. See how it helps businesses succeed. See it at ibm.com/middleware/integrate

IBM, the IBM logo, DB2 and WebSphere are registered trademarks or trademarks of International Business Machines Corporation in the United States and/or other countries.
© 2004 IBM Corporation. All rights reserved.

BRIEFS**AT&T to Provide Underwriters' VPN**

AT&T Corp. has won a multimillion-dollar contract from Underwriters Laboratories Inc. for integrated networking. AT&T will provide an IP virtual private network that will serve as UL's primary data channel, integrating its Northbrook, Ill., headquarters with 27 locations worldwide. AT&T will also provide a backup network to automatically reroute traffic in the event of a disaster.

Guardian Extends Siemens Contract

Siemens Business Services Inc. in Norwalk, Conn., and The Guardian Life Insurance Co. of America in New York announced a performance-based agreement that extends their multimillion-dollar outsourcing relationship until 2009. The on-demand outsourcing model provides IT support services for 5,000 employees and 2,800 agents.

Accenture Wins Allmerica Project

Allmerica Financial Corp.'s property and casualty insurance division has chosen Accenture Ltd. to implement a Web-based software platform to improve the efficiency of the insurer's underwriting systems through diagnostics and rules-based technology. The system will help automate underwriters' routine tasks, letting them focus on core activities such as improving loss and expense ratios.

AMP, CSC Sign Deal

AMP Ltd., a Sydney, Australia-based financial services company, has signed a three-year, \$103 million IT outsourcing contract extension with Computer Sciences Corp. in El Segundo, Calif. Under the agreement, CSC will continue to provide desktop and network support, mainframe maintenance and other services for AMP's Australian operations through May 2007.

PAUL GLEN

Getting to Done

I'M FREQUENTLY CALLED upon to help figure out what to do with a project that might be in trouble. Of course, determining whether a project is in trouble is often not a trivial problem. We like to talk about troubled projects as if there were a single bit that visibly flipped from one to zero, but unfortunately it's not that easy.

While the symptoms presented vary widely, there are a few questions that I always ask to help determine

whether the project is indeed in trouble. Some questions are deceptively simple with surprisingly subtle answers. Perhaps the most important is, "How will you know when you're done?"

One thing that all projects have in common is that they are (or at least are intended to be) temporary. They should have a conclusion. So theoretically, this should be a rather easy question to answer, but it's usually greeted with blank stares followed by one of four standard responses:

Response 1: "We're done when the quality of the product meets our standards." This is the idealistic response, the "we'll sell no wine before its time" approach.

Response 2: "We're done when the product fulfills the requirements." This is the legalistic response, the "we're done when we've completed the minimum required by the letter of the law" approach.

Response 3: "We're done when we reach the schedule deadline." This is the schedule-driven, pragmatic response, the "we're taking it to the trade show whether it's ready or not" approach.

Response 4: "We're done when we run out of money." This is the

budget-driven response, the "our CFO won't give us any more money, so we'd better just roll it out" approach.

Unfortunately, none of these responses captures the subtle reality of IT work. We don't have a simple answer to the "What does 'done' mean?" question. We don't have a physical product with physical properties. It's considerably easier to discern when a bridge is done. Does it span the gorge? Is it painted? Will it withstand the traffic we anticipate for it?

For IT projects, there's only one real way to tell when a system is truly done. That's when all the stakeholders in the system agree that it's done. Each group must certify that the project sufficiently addresses its concerns. Among other criteria, they must agree that the project meets enough of the requirements, is ready when necessary, is deployable, is supportable and will be accepted by the users. In short, in the absence of physical evidence of completion, "done" is fundamentally a political decision, not a technical one.

A different yet related deceptively simple question is, "Do you think that the team has the skills to complete this project?" This one is usually



PAUL GLEN is an IT management consultant in Los Angeles and the author of the award-winning book *Leading Geeks: How to Manage and Lead the People Who Deliver Technology* (Jossey-Bass, Platiere, 2003). He can be reached at info@2-consulting.com.

answered with a list of the technical skills of the team members.

Of course, technical skills are important for getting to done, but clearly they're not sufficient if we understand that "done" is defined politically, not technically. There are other equally important skills for building the consensus required for success. They include the following:

Listening. Do the team members have the ability to listen carefully for both technical and business requirements? Can they hear both the issues and the feelings that surround those issues? Can they confirm what they hear to ensure that they haven't misunderstood?

Identifying interests. Do the team members have the ability not only to hear what the stakeholders are saying, but also to anticipate and interpret their interests? Can they understand what may be driving the requests and demands that they hear?

Managing constructive conflict. Does the group have the ability to engage in the constructive conflict required for building consensus? Can it deal with the conflicting demands of stakeholders? Can it reconcile the emotional needs of stakeholders?

Negotiating trade-offs. And finally, can the team manage the negotiating process required to build consensus? IT projects are now the gridiron on which corporate politics are played. As systems become integral to business processes, turf battles may be negotiated during the requirements and acceptance phases of projects.

So when you contemplate your next project, consider not just the launch of the project, but how the team will get to "done." When you think about the end first, you've got a better chance of getting there.

• 46978

WANT OUR OPINION?

For more columns and links to our archives, go to www.computerworld.com/opinions

Got Questions About Network Consolidation?

Computerworld's IT Executive Summit Has the Answers

If you're an IT executive* in an end-user organization, apply to attend Computerworld's upcoming complimentary half-day summit on Network Consolidation.

CIOs and senior IT executives are finding that consolidating high-performance networks can play a key role in improving business application performance while significantly reducing operational costs.

The proliferation of network capacity and related storage and server infrastructure presents a daunting challenge for today's enterprises, many of which are positioning themselves for growth yet still seeking to reduce IT costs where feasible.

By leveraging the knowledge of industry experts and the real-world experience and advice of your IT peers, this IT Executive Summit will provide an overview of effective strategies for consolidating and connecting networks and data center applications.

*Complimentary registration is restricted to qualified IT executives only.

Apply for registration today

For more information or to apply, visit
www.itexecutivesummit.com/nc

Streamlining Networks and Data Centers: The Business Benefits of Consolidation

New York City • June 15, 2004

New York Marriott Marquis • Cantor Jolson Room • 1535 Broadway

7:45am to 8:15am	Registration and Networking Breakfast
8:15am to 8:45am	Rebuilding the IT Foundation Maryfran Johnson, Editor in Chief, Computerworld
8:45am to 9:15am	Infrastructure Makeover: Moving the U.S. Air Force Toward Network-Centric Services Delivery Brigadier General Brad Butler, Deputy Chief Information Officer, U.S. Air Force
9:15am to 9:45am	User Case Study
9:45am to 10:15am	Refreshment and Networking Break
10:15am to 10:45am	Customer Challenges and Solutions: Real-Life Scenarios Connecting Data Centers Over Distance Steve Adolph, CTO, Enterprise Solutions Group, CIENA
10:45am to 11:15am	Network Consolidation and the Data Center: Boosting Business Performance and Application Availability Richard Villars, Vice President, Storage Systems, IDC
11:15am to noon	Strategies for Streamlining Key IT Resources Panel Moderator: Maryfran Johnson, Editor in Chief, Computerworld Panelists: Stephen Morris, CIO, TAC Worldwide Companies; Kamal Narang, CTO, CTIS, Inc.
Noon	Program Concludes

Selected speakers include:



Maryfran Johnson
Editor in Chief
Computerworld



Brigadier General
Brad Butler
Deputy Chief
Information Officer
U.S. Air Force



Steve Adolph
CTO, Enterprise
Solutions Group
CIENA



Richard Villars
Vice President,
Storage Systems
IDC

This program will also take place in: San Francisco • August 5, 2004

Chicago • August 25, 2004

Dallas • September 22, 2004

For more information on these locations, call 888-299-0155

Exclusively sponsored by:



COMPUTERWORLD
IT EXECUTIVE SUMMIT
NETWORK CONSOLIDATION



Get Rid of the PC Box. Save Space.

The PC Box



...or Not



An entire PC inside a keyboard

OPTIONS:

Internal slim CDRW/DVD • Internal floppy • Internal fax modem • DVI (Digital Video)
Parallel Port • TV-Out (NTSC/PAL) • Plastic Skin Protector • LCD Displays: 15", 17",
18" and 19" (touch screen available) • Wireless 802.11b/g available

Runs all Microsoft™ Windows 98/2K/XP/NT operating systems.
U.S. Patent Pending. © 2004, Cybernet Manufacturing, Inc. All rights reserved. The
Cybernet logo and Zero-Footprint-PC are trademarks of Cybernet Manufacturing, Inc.
Intel, Intel Inside, Pentium, Celeron are trademarks, or registered trademarks of Intel
Corporation, or its subsidiaries in the United States and other countries. All other regis-
tered trademarks are property of their respective owners. Prices and specifications are
subject to change without notice. All prices are excluding tax and shipping. *Monitor
not included.

As an I.T. Manager, your greatest challenge could
be where to put that big PC BOX! Cybernet has
created an innovative, all-in-one, Zero-Footprint-PC.
The entire PC fits inside a normal size keyboard!
This design has helped many businesses nationwide
to save valuable space.



STANDARD FEATURES:

- Intel® Pentium® 4 Processor up to 2.80GHz/533 FSB
- 128MB DDR333 SDRAM up to 2GB
- 40GB IDE 7200 RPM hard drive, up to any size
- 10/100 Ethernet, 4 USB 2.0, 2 IEEE1394 Firewire, 2 Serial Ports
- 2-Year Limited Warranty

All these features are inside the keyboard!

As low as **\$475***

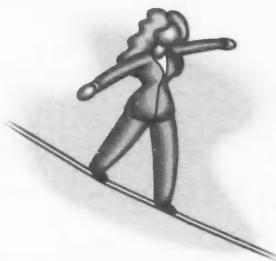
CYBERNET™
Space Saving Technology



For product specs and model options visit us at: www.cybernetman.com,
or call: TOLL FREE 888-834-4577 International 949-477-0300

Advertising Supplement

IT Careers: CIOs Share Career Tips for Women



No three careers in the information technology profession are the same. However, when discussing how to build an IT career, three IT leaders share a common belief: Women must be willing to take the risky projects.

Barbara Cooper, CIO for Toyota America; Ann M. Harten, SVP and CIO for SIRVA; and Jane Fishkin, CIO for the Brookings Institution, are members of the newly formed CIO Executive Council – a group that is studying the future of technology and how to move forward in an increasingly complex technological world. All three have found some common themes in building careers: willingness to take on projects that seem “out there” at the time, being surrounded by bright people, and understanding that choices will have to be made.

Senior Operations Engineer wanted to be responsible for the specification, installation & configuration of revenue generating value-added products with live IT. Must have 5 yrs exp. in providing expert, remote & on-site tech support for all company products across all mobile technologies including T1s, ISDN, GSM/GPRS, resolving any issues which may occur; resolve escalated tech issues to customer acceptance level within specified timelines. Must work proactively to ensure that all live systems are kept up-to-date with minimal disruption to service; identify & track hardware & software problems as they escalate; relevant degree & 3 yrs exp. vendor interface as first line of support for third party products, e.g. Oracle, Ingres, databases, ISS email gateways, servers, & SMSC interfaces; 3 yrs. part of support platforms; maintain extensive knowledge in HP SS7 OpenCall Protocol, software & hardware; lead a team of Engs. to maintain ownership of some customer accs., ensuring all support issues are resolved with agreed Service Level agreements; review all call center reports prior to delivery to customers & all methods of procedure, which are implemented at customer site; interfaces with Product Ctrs. providing service on design & implementation of products; take lead in learning new products & introducing such products to the region; act as mentor & tech advisor to junior Open Engs.; provide 24 x 7 tech suppport to customers & Open Engs. w/in co. support framework. Must have Bach. Deg. in Comp. Sc., Elec. Eng. or related field & yrs software tech. support exper. incl. exper. troubleshooting HP/Unix oper. systems & Oracle DBAs; & indep. exp. with wireless technologies; provided exper. switches. 40/hr/wk. Salary \$65,000 - 70,000/yr. Send 2 resumes to Caseff@20300055, Division of Computer Services, 19 Stamford St., 1st Fl., Boston, MA 02114.

COMPUTER SYSTEMS ANALYST is a computer consulting company specializing in providing skilled computer professionals to a wide variety of clients. We currently have the following opportunities available to work in our Moraga, CA office:

Please send resume to Interskills LLC with cover letter to Tony McKenzie, 879 Augusta Drive, Moraga, CA 94556. Tel (925) 631-0312, Fax: (925) 377-1000. E-mail: TonyM@iskslls.com. For additional information on the company visit our web site at www.interskills.com. Interskills LLC is an affirmative action/equal opportunity employer committed to the development of a diverse workforce.

InterSkills

If you've been searching for a progressive, team-oriented company where you can put your technical skills to work, Cabela's, the World's Foremost Outfitter of Hunting, Fishing and Outdoor Gear, is currently seeking an experienced Digital Asset Manager to work in our catalog department in Sidney, Nebraska. Applicant must have a basic knowledge of hardware and software systems associated with digital asset management and a minimum of three years experience in prepress, print operations or operations management. In addition applicants must have the ability to understand and manage database applications such as MediaBank, Filemaker Pro and Microsoft Access. The position also requires excellent communication skills, including writing and managing database job creation efforts and checking work for accuracy. Unix experience is helpful. Cabela's offers competitive wages and benefits as well as opportunity for advancement and furthering your education. Qualified applicants should submit a resume and cover letter online at www.cabelas.com. Select "About Cabela's", and then select "Careers". Job #14681.

We are looking for a system analyst to perform maintenance of existing web-sites and create original concepts for new websites for corporate clients. This is a full-time position, 40 hours/week, no overtime. Work schedule is 8:00 a.m. to 5:00 p.m. The basic salary for the position is \$33,654 per year.

The successful candidates should have completed 8 years of grade school, 4 years of high school and 4 years of college and possess a Bachelor's Degree in Information Systems. We require at least 2 years of experience as a web-designer. Experience with Macromedia Dreamweaver, Flash and Cold Fusion, Microsoft FrontPage, Image Ready, Illustrator as well as with dynamic web-pages and HTML, is mandatory. Fluency in English and Bulgarian is also required.

Applicants must show proof of legal authority to work in the United States. No calls; please send 2 copies of both resume and cover letter to:

ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY
401 South State Street - 7 North
Chicago, IL 60605
Attention: Joanne Breaux
Reference #VIL 35715 - N
An employer paid ad.

"You have to know that you will take the opportunity when it presents itself," Cooper says. "It may mean moving, taking an overseas assignment or taking on an area you may not know a lot about. That has always been more of a challenge for women who have families or who have a working spouse."

Fishkin, who chose public sector over commercial when she left IBM from Brookings, says it's also important to know and accept your own approach to careers. "There are those who plan their careers and know what steps they want to take next. There are others who don't plan – they do what they like and go where they're needed." Fishkin is the latter but says the end result looks as though she planned it. An economist by education, she began with punch cards and 1s and 0s at IBM. After moving to Brookings, she was immersed in conversations about the ethics of the Internet and e-commerce – more than two decades ago.

The three CIOs identify common skills they look for in preparing IT leaders of tomorrow.

- The ability to broaden experiences.
- A mix between technical and business/institutional assignments.
- The ability to influence others.
- The personality to be an aggressive learner.

"My advice is to broaden your experiences and stay away from pigeon holing. If you're provided an opportunity to work on the business side, grab it. Step outside your comfort zone," Harten explains.

Fishkin says, "I've hired a lot of people who didn't have the exact skill or competency that was needed for the job. It's really about their attitude and their ability to learn quickly, that they're not afraid to volunteer to take on something new." And, according to Cooper, communication "is as important as knowing any technology. It doesn't matter if you're better at Java or Dot-Net if you can't influence others, negotiate and drive change."

Once women reach leadership positions, continued learning is critical, they say. Cooper's greatest challenge is preparing people to manage and lead an ever more challenging IT world – studying, projecting and then linking technology to people. Harten relies on extensive networking to enrich herself personally, but also bring value to her company. "Through these relationships, I've been able to refine my thinking and avoid pitfalls." For Fishkin, the juice of the future is continuing to find ways for technology to enable the business, government and education experts she supports – with far-flung projects that carefully examine the future, using technology that needs to be up and running today.

For more information about IT Careers advertising, please contact: Nancy Percival Vice President, Recruitment Advertising 800.762.2977
500 Old Connecticut Path
Framingham, MA 01701
Produced by Carole R. Hedden



"DIVERSITY IN PRODUCTS, SERVICES AND PEOPLE"

THE SOCIAL SECURITY ADMINISTRATION IN WOODLAWN, MARYLAND is seeking highly motivated IT Professionals for the following types of positions:

- Mainframe Developers (COBOL, CICS)
- Internet Developers (Java, WebSphere, CGI)
- Database Administrators (DB2, IDMS, Oracle)
- Systems Operation Analysts (SUN/UNIX, JCL, TSO/ISPF, z/OS, Control M)

COME JOIN OUR WINNING TEAM!

WE OFFER:

- COMPETITIVE SALARIES – RANGE: \$52,963-\$85,867
- A COMPREHENSIVE BENEFITS PACKAGE INCLUDING:
 - RETIREMENT SAVINGS INVESTMENT PLAN
 - HEALTH, LIFE AND LONG TERM INSURANCE FOR SELF AND FAMILY
 - PAID VACATION, SICK LEAVE AND 10 PAID HOLIDAYS
 - PAID OVERTIME AND ONGOING TECHNICAL TRAINING
 - FLEXIBLE WORK SCHEDULES.

ALL OF THIS AND A POSITIVE, CASUAL WORK ENVIRONMENT!

To apply go to USAJOBS at: <http://jobsearch.usajobs.opm.gov/> and select the Social Security Administration. Must be a United States citizen to apply.



www.socialsecurity.gov

EEO/ADA

IT PROFESSIONALS

Consultant

[Glen Mills, Pennsylvania and other locations through the U.S.] Design and implement custom technology enabled business processes, including SCM and CRM applications. Develop system requirements and define support procedures. Draft component designs, manage client engagements and identify follow-up opportunities. Develop hypothesis and identify data needed to evaluate promising business systems. Evaluate alternative solutions for issues encountered on engagements. Draft effective presentations for clients. Gain an understanding of clients' key business decisions and implications on their businesses. Write Business Assessments of technology available, including Interface between Legacy & Oracle systems and their potential impact on business requirements. Develop new business processes and application designs using Microsoft Visio within Oracle CRM modules. Provide recommendations on system alternatives, create designs for complex technical requirements including gap analysis, infrastructure, Oracle enhancements, and conversions. Develop test plans, scripts, cases and acceptance criteria utilizing Microsoft Visio. Prepare deliverables on engagements. Salary is \$74,751.10 per year Mon-Fri, 9:00 am to 5:00 pm.

The position requires Bachelor's degree or equivalent in Computer Science, Math, Engineering (any), Information Systems, Computer Applications + 2 years of experience in the job offered or 2 years of experience as a Systems Analyst. Considerations: Project Analyst. Related experience must include at least six months with Microsoft Visio, Mercury Interactive Software, Oracle Systems and Oracle Database Management (CRM) applications.

Please send your resume, referencing Job Order number **WEB-423355** to the PA CareerLink FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144 EOE.

Senior iSeries Systems Engineers - Requires Bachelor's or equivalent in Computer Science or a related field & 5 years experience in the job offered or 5 years experience in Systems/Technology with 3 years of the experience being in Systems Engineering. A minimum of 18 months of TCP/IP & SNA communications on the iSeries is essential. Minimum required for testing certifications: IBM LPAR Expert & iSeries Technical Solutions Expert, IBM iSeries Technical Solutions Design V5R2 & iSeries IBM Technical Solutions Implementation V5R2, IMIX V4R4 Networking.

Competitive Salary & Benefits Contact: Recruiting, Premise Inc., 4900 Creekside Drive, Clearwater, FL 33760, Robert Nowels@premisesinc.com

CyberSoft Technologies, Inc., Systems Analysts. Design, and develop enterprise level web-based applications using C#, ASP.NET, SQL Server, UML, Visio, VSS, COM/DCOM, Message Queues, and Transaction Server. Need degree in Comp or Engt + 2 year Exp Resume to: HR, 4420 FM 1960 West, Suite 222, Houston, TX 77068 or via email: jobs@cybersofttech.com

IT PROFESSIONALS

Manager

[Glen Mills, PA and other locations throughout the United States] Proven leading expertise in process areas of Supply Chain (inventory management, order management, manufacturing, procurement, Product Development (Product Design, New Product Introduction) across multiple continents. Develop go-to-market strategies for Supply Chain Planning/Execution, Collaborative Commerce, and Reporting and Data Management that support and integrate with the company's current processes and technologies. Perform quantitative analysis of supply chain requirements to design optimal networks and infrastructure and integrate Supply Chain processes with technologies to facilitate resolution of related complex client issues. Create and propose products and results to Senior Management (COO, CFO, CIO) in large international corporations across multiple continents.

The wage offered is \$116,000/year. The work schedule is Monday-Friday 9:00am-5:00pm. The minimum requirements are: Bachelor's degree in Business Administration with 5 years experience in the job offered or 5 years experience as a Manager, Senior Consultant, or Director. Considerations: This position may also include Product Development and Supply Chain strategy and processes across multiple continents. Technology consulting, Application Development/Execution, Collaborative Commerce, Reporting and Data Management, Integration of business systems, working with technologies and facilitation of resolution of related complex client issues. Quantitative analysis. Proven record of success in sales and marketing with Management (COO, CFO, CIO) for large corporations across multiple industries. "Employer will regard Bachelor's degree as equivalent to experience to be equivalent to a Master's degree + 5 years of experience.

Please send your resume, referencing Job Order Number **WEB-423370** to the PA CareerLink FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144 EOE.

Software Engineer Design & dvlp business applications using Oracle, DB2, SAS, SPSS, Access & SQL, as well as testing tools incl WinRunner, Test Director & Astra Quick Test. Unix, HP UX & UNIX platforms. Install and set up UNIX environment in mainframe dvpt life cycle. Create & execute testing scripts using C & VB. Set up & configure Load Runner to perform scenario, stress, regression, automation & functional specific performance monitoring of web applics. Dvlp test result summary report based on mean time & stndrd analysis. Must have 2 yrs exp in mainframe dvpt. Robot, Dvlp test strategies, test plans & qly assurance sched for all tests to be performed. Req in Comp Sci or Engg discipline. Considerable exp in dbms relativity. 10 yrs exp in job offd or as QA/systems Analyst. Extensive travel on assignment to various client sites in US and Canada. Salary: \$70,000/yr. Work hours: 8 am to 5 pm, M-F. Send resume to Dawn at fax number 322-245-4649

AVI Technologies, Inc.

Programmer Analysts: Analyze, architect, develop, integrate and Test Multi-Tier Enterprise Application using VB.NET, XML, Web Services, C++, UML, Rational Rose, J2EE, and EAI technologies using database in Oracle, Sybase and SQL Server. Requires a Bachelor's in Computer Science or related field and 2 years of experience. Send resume to: HR, 24 May Street, West Haven, CT 06516 or E-mail: jobs@avit.net

SENIOR SOFTWARE ENGINEER

Duties

Incl: Asst. Manager. Duties include: Asst. Manager. Technical lead will direct the research, design and develop computer software systems for cold chain management systems for the pharmaceutical industry. Responsibilities include: Analyze customer requirements and specifications. Design and implement new features using object-oriented technology, mathematics, logistics, algorithms and data structures. Develop company's proprietary API for building and manipulating ICC color profiles. Develop color management middle-tier library exposing functionality of Monaco's color management API for application programmers. Utilize MS COM interface. Facilitate support for handling device colorimetric characterization, color appearance modeling, color gamut mapping, white balance and color of color management model. Perform integration and tuning of spectrophotometer and colorimeter. Develop color management applications using MFC. Min. Reqs.: Masters Degree (foreign equivalent accepted) in CEG, Math, Physics or related field of study. PLUS: 4 yrs experience in job offered or 4 years experience as a related business development or related MUSST possess demonstrated expertise: (1) Mathematical methods for modeling and optimization of linear and non-linear data behavior, data behavior, systems of linear equations. (2) Fundamental optics principles, including light propagation, black body radiation, geometrical optics and optics of the human eye, spectral analysis. (3) SO design and architecture, multi-threaded MS COM application development, GUI, middle-tier and API libraries, programming using C/C++ COM, MFC, ATL, OLE, ODBC environment. Basic pay is \$95,100 per year FT and standard company benefits. EOE. Submit resumes to: www.fedjobs.com Case No. 200204067, Division of Career Services, Labor Certification Unit, 19 Stanford St, 1st Fl, Boston, MA 02114. EOE

The job responsibility requires travel as required. Please send your resume and cover letter to: Human Resources, Professional Computer Services, Inc., 1415 North Dayton, #3S, Chicago, IL 60622

Technical Support Analyst

Experience: Minimum 3 years relevant experience in a similar position. PGS has an opening for a Technical Support Analyst based in Chicago, Illinois. The selected candidate must have a minimum of a bachelors degree in Electronics or Management Information Systems or Computer Science or Computer related field or equivalent. A minimum of 3 years of relevant experience in a similar position is required.

Job Description: The job requires the employee to possess a minimum of 3 years recent work experience in a similar position. Responsible for wirelessly designing and implementing solutions for extending systems management capabilities of CA-Uncinter TNG. Prior experience implementing CA-Uncinter TNG is required. Experience in enterprise Systems Management products and software required.

Additional work responsibilities involve performing systems support, computer operating systems support, network systems support and configure TCP/IP and computer networks.

Require prior work experience

working in Windows, windows 2000 server, windows 2000 advanced server, Linux, Novell platform routers, gateways, LAN/WANs and firewalls.

Responsible for performing systems administration, network management, e-mail management, LAN, VPN, remote access management and providing for in-house users and external clients.

The job responsibility requires travel as required. Please send your resume and cover letter to: Human Resources, Professional Computer Services, Inc., 1415 North Dayton, #3S, Chicago, IL 60622



enterprise integration

network vulnerabilities

corporate data security

government compliance

mobile & wireless security

business management needs

The right IT professional

can jump the hurdles of

today's IT challenges.

Call:

(800) 762-2977

ASSOCIATE (IMPLEMENTATION ANALYST) Will develop and implement customized software solutions for utility or energy industry clients for billing, settlement, customer information and other systems. Will play critical role in configuring and implementing software to achieve most efficient operation. Will advise client through the implementation project and train the client in the use of the customized software. Will travel to customer sites throughout North America and the United Kingdom. Will support sales, engineering, and implementation teams in the sale, delivery, and installation of proprietary software. Will assist in development of sales strategy and will attend trade shows as company representative. Demonstrated expertise supporting software sales including customizing and demonstrating and implementing software products for the energy/utility industry. Frequent domestic and international travel. Requirements: B.S./B.A. (or equiv) in CS, M.A. part of Business Administration (with concentration in MIS/Information Systems program) and two (2) years of experience in the job offered or two (2) years experience in the related occupation of System Analysis, Implementation, or Software Product Support. Also, demonstrated expertise supporting software sales including customizing and demonstrating and implementing software products for the energy/utility industry. Frequent domestic and international travel. Offered salary is \$ 75,000/year for full-time employment (min. 40 hours per week) and standard company benefits. EOE. Subj. 2. Cases and respond to Case No. 000200024, Division of Career Services, Labor Certification Unit, 19 Staniford Street, 1st Floor, Boston, MA 02114

SOFTWARE ENGINEER: Using J2EE technologies, design and develop software application solutions for retail price management, retail purchasing and allocation optimization. Duties include implementation and deployment of solutions, writing unit tests for products, and creating customization applications including clustering and scalability. Employee Struts and XML/XSL. Min. Reg't. Master's Degree in Computer Science or related field and one (1) year of experience in the job offered or one (1) year experience in the related occupation of software application development OR IN THE ALTERNATIVE: One (1) year of experience in design in some fields of study and six (6) years of progressive work experience in job offered or related occupation of software application development. Also must possess: (1) Demonstrated experience using the following: J2EE Technologies, including EJB/JSP, Servlets and XML/XSL Technologies; (2) Demonstrated experience using Struts framework, JavaServer Faces, Spring, Java Persistence API, and Java Script. Basic pay is \$92,100 per year FT and standard company benefits. EEO. Submit 2 resumes and Response to Case No. 20212-1211, Division of Career Services, Labor Certification Unit, 19 Staniford Street, 1st Fl., Boston, MA 02114.

**Quality Control
Informatics Specialist IV**

Boehringer Ingelheim Vetmedica, Inc. has an immediate opening in its Elwood, Kansas facility for the position of Quality Control Informatics Specialist IV.

Responsible for supporting the Company's manufacturing, R&D and technical services through quality control and troubleshooting analytical methodology (wet chemistry, chromatography and spectroscopy), and for designing storage, retrieval, sharing and optimal use of manufacturing/release information and data.

Must possess a master's degree or equivalent in Computer Science or a related field and a master's degree or equivalent in Chemistry, or a related field and relevant work experience. Experience with analytical chemistry (chromatography, spectrometry, wet chemistry), programming with C++, VB, and VBA, database systems with Oracle and MS access, Windows operating system, including 2000 server, and TCP/IP networking and information security is required.

Resume and/or cover letter must reflect each requirement above and specify reference code AD-GCD/GC0204 or it will be rejected.

Forward resume to BI Staffing Center, PO Box 534, Waltham, MA 02454.

mPower Software Services has opened for Financial Analyst Duties will include but will not be limited to analyzing financial records to determine operating resources, analyze financial and business results, estimate future revenues and expenditures. A degree is required. Opening also for Business Analyst to work with software professionals to identify alternatives and solutions to complex business requirements for feasibility. Will also accept foreign equiv. of the required edc. and/or its equiv in.edu. and experience. Competitive salaries offered. Apply to: recruiting@powerss.com or mPower Software Services, 1729 Chesterfield Airport Rd, Suite 241, Chesterfield, MO 63005.

ShellSoft seeks IT professionals (programmer/system analysts, software engineers), project engineers using Oracle, SAP, SQL, Java, C/C++. Minimum requirement is MS/BS with IT experience. Some positions require travel. Please send resume to jobs@shellsoftinc.com EOE.

Emergentech is looking for IT professionals to design software and computer systems to meet project requirements. Candidates must have BS/MS degrees plus experience in the computer field. We are small but stable. Travel maybe required. Please send resumes to job@emergtechinc.com EOE.

2010-01-001

Applications Engineers needed for our Livermore, CA office. Seeking qual. candidates possessing MS or equiv. in Comp. Sci., or related field, and/or rel work exp. Part of the req. rel work exp. must include 1 yr working w/ Oracle & ColdFusion. Duties include: Develop design & code web applications; Analyze & design databases; Administer ColdFusion applications & web services. Work w/ Oracle, ColdFusion, PL/SQL & Java. Send res. ref. & sal. req. to itradenetwork, Inc. at hr@itradenetwork.com. No Phone calls.

Systems Analyst Analyzes user requirements, procedures and problems to automate processing or to upgrade existing computer system. Bachelor's degree in Computer Science, Engineering or math related and 2 yrs exp. in job offered required. Included in those 2 yrs must have 2 yrs exp with C, C++ programming languages and 2 yrs exp UNIX, MSDOS and Windows95 operating systems. Must be able to travel, \$90,000/yr. Apply by resume only to HR Dept., Time To Market, Inc., 560 S Winchester Boulevard, Suite 304, San Jose, CA - 95128. (3 positions).

Software Engineer. Develops and maintains software algorithms for Image Analysis, Pattern Recognition, Decision Making and other related intelligent processes. Performs system level object-oriented programming under Microsoft Windows XP and develops application software for the company's X-ray inspection systems. Require a master degree in computer science or a related field plus 2 yr. exp. on job offered or 2 yr. exp. in a related field. Apply to: YesTech, Inc., 1221 Puerta Del Sol, Suite 500, San Clemente, CA 92673. Attn: Owen Sit.

Systems Analyst/ASIC Designer (CAD) Engineer: Analyst user requirements, procedures and problems to automate processing or to upgrade existing computer system. Bachelor's degree in Computer Science. Engineering or math related and 2 yrs of exp in job offered required. Included in this job may have 2 yrs experience with C, C++ programming languages. Should be able to do RTL coding, timing analysis, formal verification, ATPG internal logic simulation, logic synthesis, logic design, a chip test & synthesis with UNIX, MSDOS and Windows95/98/NT operating systems. Must be able to travel, \$9000/yr. Apply by resume only to HR Dept., Time To Market, Inc., 560 S. Winchester Boulevard, suite 304, San Jose, CA 95121 (position).

WE DO
A
BETTER JOB
AT
HELPING YOU
GET ONE.



**SEARCH FOR JOBS
AND POST
YOUR RESUME ON
ITCAREERS.COM**

OR CALL
(800) 762-2977

PROGRAMMER/ANALYST to analyze, design, develop, maintain, test and support enterprise application software in a client/server environment using Java, J2EE, EJB, XML, XSLT, JMX, Oracle, Eclipse, Lotus Domino, UML, Jboss, and WebSphere under Linux, UNIX and Windows operating systems. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with 2 yrs of exp in the job offered. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to: Ravi Kandamali, Everest Computer Inc., 875 Old Roswell Road, Ste E-400, Roswell, GA 30076; Attn: Job NG.

E-Business Application Developer (Programmer/Analyst): Analyze, design, code, implement and support customized applications using Visual Basic, COM, Active Server Pages, HTML, Visual Basic, MS SQL Server, MS Transaction Server, Windows NT, Datacom, XML Scripts, File Transfer, Business System. Must have Bachelor's or equivalent in Computer Science, Information Science, Math, Engineering/Physics or related field. Must have 2 yr exp in job offered or software development. Such experience must include C++, COM, XML Scripts, MS SQL Server, MS Transaction Server and Visual Basic. Salary: \$64,000/yr. Hrs: 40hr/wk, 8:00am-5:00pm. Please send 2 copies of your resume to: Case #200300098, Division of Career Services, Labor Certification Unit, 19 Stamford Street, 1st Fl., Boston, MA 02114.

Programmer/Analyst. Responsible for design and implement major database applications. Responsible for installation, configuration, maintenance and enhancement of existing software and will be testing new software products. Will also be responsible for design, analysis, programming, and coding. Salary: \$61,650.00/yr. Hrs. of work: 40 hrs/wk. Required: Bachelor's Degree in Computer Science, Math, Physics or Engineering (any branch). Must be able to travel temporarily to job sites throughout the U.S. as needed with expenses paid by employer. Job location: Boston, MA. Send this ad and 2 copies of your resume to: Case #200300098, Division of Career Services, Labor Certification Unit, 19 Stamford Street, 1st Fl., Boston, MA 02114.

IT BUSINESS DEVELOPMENT MANAGERS NEEDED

MindTree Consulting, an established and expanding IT consulting firm, specializing in IT realization services to Internet infrastructure and device vendors, is searching for qualified IT business development managers to join its growing team. Responsibilities include developing and managing all business development initiatives for MindTree in the United States. Qualified applicants will have a technical and/or marketing degree and at least five years of experience in sales and/or an IT marketing executive manager position. Positions may require relocation to various client sites throughout the United States. Must have excellent communication skills and strong resources in HR Department. The Towers at 270 Davidson Avenue, Suite 305, Somerset, NJ 08873.

Computers

Sr. Programmer Analyst Dominion Resource Services, Inc. has openings for Sr. Programmer Analysts at our Clarksburg, WV location. The ideal candidate will create, formulate and define system scope and objectives and determine procedures to achieve complete projects. Prepare detailed specifications from which programs will be written. Design, code, test, debug and document those programs. Work will provide in multi-platform environments on multiple project assignments. Minimum requirements are a bachelor's degree in Computer Science, Mechanical Engineering or Electrical Engineering and 2 yrs of programming or software engineering experience. Please submit your resume to Dominion Resources Services, Inc., ATTN: Sr. HR Generalist, Services Company, 19th Floor, One America River Plaza, 701 East Cary Street, Richmond, VA 23219.

Oracle Financial Sr. Consultant Job location: Atlanta, GA. Duties: Help implement migration of Oracle apps & system integration using BPI implementation methodology. Consult w/ clients on current state analysis, future state analysis, design, design validation & functional spec. develop. Work w/ developers to design & test tech components using PL/SQL. Design, develop, test, validate & end user training. Develop methodology & update BPI tools to conform to point releases of Oracle apps. Develop, implement, maintain Oracle config., conversions & interfaces. Requires: B.S. in Comp. Sci. Eng., Bus. Adm. or a related field, 3 yrs exp in the job offered or 2 yrs exp. as Software Eng. or Analyst. Will accept any comb. of educ. & exp. equal to 3 yrs. Concurrent exp. in Oracle & 2 yrs exp. maintaining Oracle db & 3 yrs. exp. using PL/SQL. Mail resume (no calls) to: Michelle Ramirez, Answerworks, Inc., 1001 Brinkley Bay Dr., Ste. 3000, Miami, FL 33131.

A position is available for a VLM Software Development Engineer III with an Atlanta based software development company. The Software Development Engineer III will be primarily responsible for all phases of the software development lifecycle for new and existing programs. Candidates for this position should possess a Bachelor's degree in Computer Science and at least 5 years' experience and at least 5 years' experience in software development, including 3 years' in a senior position. 3 years' experience with C/C++, VC++, MFC, Windows development, and Object Oriented programming; 3 years' experience analyzing, specifying, and defining system requirements; 3 years' experience creating technical functional specifications and design documentation; 3 years' experience with comprehensive testing of software systems and modifications; and 3 years' experience in 3 of the following: C/C++, Oracle, SQL, Sybase, DB2, XML, or COM. Apply by mail to:

William Moats
BlueCube Software, Inc.
3905 Brookside Parkway
Alpharetta, Georgia 30022

Application Engineer responsible for working with clients in Unix & NT. Engage in design, configuration, development & testing of automation/business software for pharmaceutical & other industries. 2-8 engineers testing IA software in HUBS on a weekly basis. Will develop & maintain tools & relational databases. Will maintain system documentation according to FDA guidelines & develop IQ & OQ documents. Extended client contact at customer sites throughout the U.S. will be required. Minimum requirements are: Master's degree in computer science or a related field. No experience required. Must possess: (i) strong knowledge of C, C++ and Visual Basic; (ii) ability to work with software in Unix and NT operating systems; and (iii) ability to work with relational databases. Must have unrestricted authorization to work in U.S. M-F: 9:00 a.m. - 5:00 p.m. 40 hours per week. Salary: \$60,000-\$72,000. An EOE. Send 2 copies of resume to Case #200204086, Division of Career Services, Labor Certification Unit, 19 Stamford St., 1st fl., Boston, MA 02114.

Software Programmer

Requirement analysis, design, development, testing and implementation of commercial / business application systems. Must have demonstrated ability in - Object Oriented Design & Development using Visual C++, MFC, Active X, Visual Basic ; using VB, ASP, JSP, SQL, Oracle, DB2, Access, Oracle 8i, 9i, 10g, 11g, 12c, 13c, 14c, 15c, 16c, 17c, 18c, 19c, 20c, 21c, 22c, 23c, 24c, 25c, 26c, 27c, 28c, 29c, 30c, 31c, 32c, 33c, 34c, 35c, 36c, 37c, 38c, 39c, 40c, 41c, 42c, 43c, 44c, 45c, 46c, 47c, 48c, 49c, 50c, 51c, 52c, 53c, 54c, 55c, 56c, 57c, 58c, 59c, 60c, 61c, 62c, 63c, 64c, 65c, 66c, 67c, 68c, 69c, 70c, 71c, 72c, 73c, 74c, 75c, 76c, 77c, 78c, 79c, 80c, 81c, 82c, 83c, 84c, 85c, 86c, 87c, 88c, 89c, 90c, 91c, 92c, 93c, 94c, 95c, 96c, 97c, 98c, 99c, 100c, 101c, 102c, 103c, 104c, 105c, 106c, 107c, 108c, 109c, 110c, 111c, 112c, 113c, 114c, 115c, 116c, 117c, 118c, 119c, 120c, 121c, 122c, 123c, 124c, 125c, 126c, 127c, 128c, 129c, 130c, 131c, 132c, 133c, 134c, 135c, 136c, 137c, 138c, 139c, 140c, 141c, 142c, 143c, 144c, 145c, 146c, 147c, 148c, 149c, 150c, 151c, 152c, 153c, 154c, 155c, 156c, 157c, 158c, 159c, 160c, 161c, 162c, 163c, 164c, 165c, 166c, 167c, 168c, 169c, 170c, 171c, 172c, 173c, 174c, 175c, 176c, 177c, 178c, 179c, 180c, 181c, 182c, 183c, 184c, 185c, 186c, 187c, 188c, 189c, 190c, 191c, 192c, 193c, 194c, 195c, 196c, 197c, 198c, 199c, 200c, 201c, 202c, 203c, 204c, 205c, 206c, 207c, 208c, 209c, 210c, 211c, 212c, 213c, 214c, 215c, 216c, 217c, 218c, 219c, 220c, 221c, 222c, 223c, 224c, 225c, 226c, 227c, 228c, 229c, 230c, 231c, 232c, 233c, 234c, 235c, 236c, 237c, 238c, 239c, 240c, 241c, 242c, 243c, 244c, 245c, 246c, 247c, 248c, 249c, 250c, 251c, 252c, 253c, 254c, 255c, 256c, 257c, 258c, 259c, 260c, 261c, 262c, 263c, 264c, 265c, 266c, 267c, 268c, 269c, 270c, 271c, 272c, 273c, 274c, 275c, 276c, 277c, 278c, 279c, 280c, 281c, 282c, 283c, 284c, 285c, 286c, 287c, 288c, 289c, 290c, 291c, 292c, 293c, 294c, 295c, 296c, 297c, 298c, 299c, 300c, 301c, 302c, 303c, 304c, 305c, 306c, 307c, 308c, 309c, 310c, 311c, 312c, 313c, 314c, 315c, 316c, 317c, 318c, 319c, 320c, 321c, 322c, 323c, 324c, 325c, 326c, 327c, 328c, 329c, 330c, 331c, 332c, 333c, 334c, 335c, 336c, 337c, 338c, 339c, 340c, 341c, 342c, 343c, 344c, 345c, 346c, 347c, 348c, 349c, 350c, 351c, 352c, 353c, 354c, 355c, 356c, 357c, 358c, 359c, 360c, 361c, 362c, 363c, 364c, 365c, 366c, 367c, 368c, 369c, 370c, 371c, 372c, 373c, 374c, 375c, 376c, 377c, 378c, 379c, 380c, 381c, 382c, 383c, 384c, 385c, 386c, 387c, 388c, 389c, 390c, 391c, 392c, 393c, 394c, 395c, 396c, 397c, 398c, 399c, 400c, 401c, 402c, 403c, 404c, 405c, 406c, 407c, 408c, 409c, 410c, 411c, 412c, 413c, 414c, 415c, 416c, 417c, 418c, 419c, 420c, 421c, 422c, 423c, 424c, 425c, 426c, 427c, 428c, 429c, 430c, 431c, 432c, 433c, 434c, 435c, 436c, 437c, 438c, 439c, 440c, 441c, 442c, 443c, 444c, 445c, 446c, 447c, 448c, 449c, 450c, 451c, 452c, 453c, 454c, 455c, 456c, 457c, 458c, 459c, 460c, 461c, 462c, 463c, 464c, 465c, 466c, 467c, 468c, 469c, 470c, 471c, 472c, 473c, 474c, 475c, 476c, 477c, 478c, 479c, 480c, 481c, 482c, 483c, 484c, 485c, 486c, 487c, 488c, 489c, 490c, 491c, 492c, 493c, 494c, 495c, 496c, 497c, 498c, 499c, 500c, 501c, 502c, 503c, 504c, 505c, 506c, 507c, 508c, 509c, 510c, 511c, 512c, 513c, 514c, 515c, 516c, 517c, 518c, 519c, 520c, 521c, 522c, 523c, 524c, 525c, 526c, 527c, 528c, 529c, 530c, 531c, 532c, 533c, 534c, 535c, 536c, 537c, 538c, 539c, 540c, 541c, 542c, 543c, 544c, 545c, 546c, 547c, 548c, 549c, 550c, 551c, 552c, 553c, 554c, 555c, 556c, 557c, 558c, 559c, 550c, 551c, 552c, 553c, 554c, 555c, 556c, 557c, 558c, 559c, 560c, 561c, 562c, 563c, 564c, 565c, 566c, 567c, 568c, 569c, 570c, 571c, 572c, 573c, 574c, 575c, 576c, 577c, 578c, 579c, 580c, 581c, 582c, 583c, 584c, 585c, 586c, 587c, 588c, 589c, 580c, 581c, 582c, 583c, 584c, 585c, 586c, 587c, 588c, 589c, 590c, 591c, 592c, 593c, 594c, 595c, 596c, 597c, 598c, 599c, 590c, 591c, 592c, 593c, 594c, 595c, 596c, 597c, 598c, 599c, 600c, 601c, 602c, 603c, 604c, 605c, 606c, 607c, 608c, 609c, 600c, 601c, 602c, 603c, 604c, 605c, 606c, 607c, 608c, 609c, 610c, 611c, 612c, 613c, 614c, 615c, 616c, 617c, 618c, 619c, 610c, 611c, 612c, 613c, 614c, 615c, 616c, 617c, 618c, 619c, 620c, 621c, 622c, 623c, 624c, 625c, 626c, 627c, 628c, 629c, 620c, 621c, 622c, 623c, 624c, 625c, 626c, 627c, 628c, 629c, 630c, 631c, 632c, 633c, 634c, 635c, 636c, 637c, 638c, 639c, 630c, 631c, 632c, 633c, 634c, 635c, 636c, 637c, 638c, 639c, 640c, 641c, 642c, 643c, 644c, 645c, 646c, 647c, 648c, 649c, 640c, 641c, 642c, 643c, 644c, 645c, 646c, 647c, 648c, 649c, 650c, 651c, 652c, 653c, 654c, 655c, 656c, 657c, 658c, 659c, 650c, 651c, 652c, 653c, 654c, 655c, 656c, 657c, 658c, 659c, 660c, 661c, 662c, 663c, 664c, 665c, 666c, 667c, 668c, 669c, 660c, 661c, 662c, 663c, 664c, 665c, 666c, 667c, 668c, 669c, 670c, 671c, 672c, 673c, 674c, 675c, 676c, 677c, 678c, 679c, 670c, 671c, 672c, 673c, 674c, 675c, 676c, 677c, 678c, 679c, 680c, 681c, 682c, 683c, 684c, 685c, 686c, 687c, 688c, 689c, 680c, 681c, 682c, 683c, 684c, 685c, 686c, 687c, 688c, 689c, 690c, 691c, 692c, 693c, 694c, 695c, 696c, 697c, 698c, 699c, 690c, 691c, 692c, 693c, 694c, 695c, 696c, 697c, 698c, 699c, 700c, 701c, 702c, 703c, 704c, 705c, 706c, 707c, 708c, 709c, 700c, 701c, 702c, 703c, 704c, 705c, 706c, 707c, 708c, 709c, 710c, 711c, 712c, 713c, 714c, 715c, 716c, 717c, 718c, 719c, 710c, 711c, 712c, 713c, 714c, 715c, 716c, 717c, 718c, 719c, 720c, 721c, 722c, 723c, 724c, 725c, 726c, 727c, 728c, 729c, 720c, 721c, 722c, 723c, 724c, 725c, 726c, 727c, 728c, 729c, 730c, 731c, 732c, 733c, 734c, 735c, 736c, 737c, 738c, 739c, 730c, 731c, 732c, 733c, 734c, 735c, 736c, 737c, 738c, 739c, 740c, 741c, 742c, 743c, 744c, 745c, 746c, 747c, 748c, 749c, 740c, 741c, 742c, 743c, 744c, 745c, 746c, 747c, 748c, 749c, 750c, 751c, 752c, 753c, 754c, 755c, 756c, 757c, 758c, 759c, 750c, 751c, 752c, 753c, 754c, 755c, 756c, 757c, 758c, 759c, 760c, 761c, 762c, 763c, 764c, 765c, 766c, 767c, 768c, 769c, 760c, 761c, 762c, 763c, 764c, 765c, 766c, 767c, 768c, 769c, 770c, 771c, 772c, 773c, 774c, 775c, 776c, 777c, 778c, 779c, 770c, 771c, 772c, 773c, 774c, 775c, 776c, 777c, 778c, 779c, 780c, 781c, 782c, 783c, 784c, 785c, 786c, 787c, 788c, 789c, 780c, 781c, 782c, 783c, 784c, 785c, 786c, 787c, 788c, 789c, 790c, 791c, 792c, 793c, 794c, 795c, 796c, 797c, 798c, 799c, 790c, 791c, 792c, 793c, 794c, 795c, 796c, 797c, 798c, 799c, 800c, 801c, 802c, 803c, 804c, 805c, 806c, 807c, 808c, 809c, 800c, 801c, 802c, 803c, 804c, 805c, 806c, 807c, 808c, 809c, 810c, 811c, 812c, 813c, 814c, 815c, 816c, 817c, 818c, 819c, 810c, 811c, 812c, 813c, 814c, 815c, 816c, 817c, 818c, 819c, 820c, 821c, 822c, 823c, 824c, 825c, 826c, 827c, 828c, 829c, 820c, 821c, 822c, 823c, 824c, 825c, 826c, 827c, 828c, 829c, 830c, 831c, 832c, 833c, 834c, 835c, 836c, 837c, 838c, 839c, 830c, 831c, 832c, 833c, 834c, 835c, 836c, 837c, 838c, 839c, 840c, 841c, 842c, 843c, 844c, 845c, 846c, 847c, 848c, 849c, 840c, 841c, 842c, 843c, 844c, 845c, 846c, 847c, 848c, 849c, 850c, 851c, 852c, 853c, 854c, 855c, 856c, 857c, 858c, 859c, 850c, 851c, 852c, 853c, 854c, 855c, 856c, 857c, 858c, 859c, 860c, 861c, 862c, 863c, 864c, 865c, 866c, 867c, 868c, 869c, 860c, 861c, 862c, 863c, 864c, 865c, 866c, 867c, 868c, 869c, 870c, 871c, 872c, 873c, 874c, 875c, 876c, 877c, 878c, 879c, 870c, 871c, 872c, 873c, 874c, 875c, 876c, 877c, 878c, 879c, 880c, 881c, 882c, 883c, 884c, 885c, 886c, 887c, 888c, 889c, 880c, 881c, 882c, 883c, 884c, 885c, 886c, 887c, 888c, 889c, 890c, 891c, 892c, 893c, 894c, 895c, 896c, 897c, 898c, 899c, 890c, 891c, 892c, 893c, 894c, 895c, 896c, 897c, 898c, 899c, 900c, 901c, 902c, 903c, 904c, 905c, 906c, 907c, 908c, 909c, 900c, 901c, 902c, 903c, 904c, 905c, 906c, 907c, 908c, 909c, 910c, 911c, 912c, 913c, 914c, 915c, 916c, 917c, 918c, 919c, 910c, 911c, 912c, 913c, 914c, 915c, 916c, 917c, 918c, 919c, 920c, 921c, 922c, 923c, 924c, 925c, 926c, 927c, 928c, 929c, 920c, 921c, 922c, 923c, 924c, 925c, 926c, 927c, 928c, 929c, 930c, 931c, 932c, 933c, 934c, 935c, 936c, 937c, 938c, 939c, 930c, 931c, 932c, 933c, 934c, 935c, 936c, 937c, 938c, 939c, 940c, 941c, 942c, 943c, 944c, 945c, 946c, 947c, 948c, 949c, 940c, 941c, 942c, 943c, 944c, 945c, 946c, 947c, 948c, 949c, 950c, 951c, 952c, 953c, 954c, 955c, 956c, 957c, 958c, 959c, 950c, 951c, 952c, 953c, 954c, 955c, 956c, 957c, 958c, 959c, 960c, 961c, 962c, 963c, 964c, 965c, 966c, 967c, 968c, 969c, 960c, 961c, 962c, 963c, 964c, 965c, 966c, 967c, 968c, 969c, 970c, 971c, 972c, 973c, 974c, 975c, 976c, 977c, 978c, 979c, 970c, 971c, 972c, 973c, 974c, 975c, 976c, 977c, 978c, 979c, 980c, 981c, 982c, 983c, 984c, 985c, 986c, 987c, 988c, 989c, 980c, 981c, 982c, 983c, 984c, 985c, 986c, 987c, 988c, 989c, 990c, 991c, 992c, 993c, 994c, 995c, 996c, 997c, 998c, 999c, 990c, 991c, 992c, 993c, 994c, 995c, 996c, 997c, 998c, 999c, 1000c, 1001c, 1002c, 1003c, 1004c, 1005c, 1006c, 1007c, 1008c, 1009c, 1000c, 1001c, 1002c, 1003c, 1004c, 1005c, 1006c, 1007c, 1008c, 1009c, 1010c, 1011c, 1012c, 1013c, 1014c, 1015c, 1016c, 1017c, 1018c, 1019c, 1010c, 1011c, 1012c, 1013c, 1014c, 1015c, 1016c, 1017c, 1018c, 1019c, 1020c, 1021c, 1022c, 1023c, 1024c, 1025c, 1026c, 1027c, 1028c, 1029c, 1020c, 1021c, 1022c, 1023c, 1024c, 1025c, 1026c, 1027c, 1028c, 1029c, 1030c, 1031c, 1032c, 1033c, 1034c, 1035c, 1036c, 1037c, 1038c, 1039c, 1030c, 1031c, 1032c, 1033c, 1034c, 1035c, 1036c, 1037c, 1038c, 1039c, 1040c, 1041c, 1042c, 1043c, 1044c, 1045c, 1046c, 1047c, 1048c, 1049c, 1040c, 1041c, 1042c, 1043c, 1044c, 1045c, 1046c, 1047c, 1048c, 1049c, 1050c, 1051c, 1052c, 1053c, 1054c, 1055c, 1056c, 1057c, 1058c, 1059c, 1050c, 1051c, 1052c, 1053c, 1054c, 1055c, 1056c, 1057c, 1058c, 1059c, 1060c, 1061c, 1062c, 1063c, 1064c, 1065c, 1066c, 1067c, 1068c, 1069c, 1060c, 1061c, 1062c, 1063c, 1064c, 1065c, 1066c, 1067c, 1068c, 1069c, 1070c, 1071c, 1072c, 1073c, 1074c, 1075c, 1076c, 1077c, 1078c, 1079c, 1070c, 1071c, 1072c, 1073c, 1074c, 1075c, 1076c, 1077c, 1078c, 1079c, 1080c, 1081c, 1082c, 1083c, 1084c, 1085c, 1086c, 1087c, 1088c, 1089c, 1080c, 1081c, 1082c, 1083c, 1084c, 1085c, 1086c, 1087c, 1088c, 1089c, 1090c, 1091c, 1092c, 1093c, 1094c, 1095c, 1096c, 1097c, 1098c, 1099c, 1090c, 1091c, 1092c, 1093c, 1094c, 1095c, 1096c, 1097c, 1098c, 1099c, 1100c, 1101c, 1102c, 1103c, 1104c, 1105c, 1106c, 1107c, 1108c, 1109c, 1100c, 1101c, 1102c, 1103c, 1104c, 1105c, 1106c, 1107c, 1108c, 1109c, 1110c, 1111c, 1112c, 1113c, 1114c, 1115c, 1116c, 1117c, 1118c, 1119c, 1110c, 1111c, 1112c, 1113c, 1114c, 1115c, 1116c, 1117c, 1118c, 1119c, 1120c, 1121c, 1122c, 1123c, 1124c, 1125c, 1126c, 1127c, 1128c, 1129c, 1120c, 1121c, 1122c, 1

Continued from page 1

RFID

nology to track aircraft parts. Boeing and Airbus buy parts and subsystems from many of the same companies, Porad said, estimating that they have "70% common suppliers."

Porad said an agreement on RFID standards between Boeing and Airbus should help reduce deployment costs for suppliers and lead to the development of smart RFID tags that airlines could use to better manage and even reduce their parts inventories. The value of those inventories can amount to \$1 billion per airline, he added.

That's about what Delta's parts inventory is worth, said Marty Kansinger, general manager of material services at the Atlanta-based airline. Delta tracks about a half-million parts, and Kansinger noted that improving the accuracy of inventory data "is very important to us" because of the potential for reducing costs.

Garbage In, Garbage Out

Parts tracking depends on the quality of data entry, which now often begins with an airplane mechanic making notes about parts replacements on a clipboard. Delta plans to conduct the RFID test to see if the tags can help speed up data entry and reduce errors while minimizing the amount of information that end users have to input manually, Kansinger said.

During the test, which will run through the end of the year, Delta will use RFID devices and so-called smart bins equipped with RFID readers at one of its repair depots to track the movement of engine parts through the facility.

Delta and Boeing also hope to determine how well RFID tags and labels — which are substrates that contain embedded tags — can stand up

to engine temperatures that reach as much as 500 degrees. Kansinger said the tag supplier, which he didn't identify, claims that the devices can withstand such temperatures. To make sure, Delta plans to put RFID labels on parts inside six to eight engines on Boeing 757s.

Delta has already done two tests of RFID tags attached to passengers' luggage [Quick-Link 45915], and a spokesman for the airline said it plans to decide by year's end whether to deploy the technology throughout its operations to track bags.

Porad said the tags planned for the commercial aviation industry will be able to store more data than the ones being tested in the retail industry



DELTA'S RFID TRIAL will track parts used in engines such as this Pratt & Whitney Series 2000.

by companies such as Wal-Mart Stores Inc. and its suppliers. For example, he noted that Boeing is using tags that can handle up to 10,000 bits of data, far more than the 256 bits supported by retail-industry tags.

The additional space is required because Boeing and its airline customers need to store more information, in-

cluding long serial numbers, detailed parts information and repair histories, Porad said.

In a test conducted during the last three months of 2003, Boeing and FedEx Corp. used RFID labels to track parts on an MD-10 freighter airplane. FedEx is scheduled to detail the results of the test at this week's aviation industry RFID forum.

FedEx officials couldn't be reached for comment last week. But Porad said the test showed that tags operating in the 13.56-MHz frequency can function inside the metal environment of an aircraft and meet Federal Aviation Administration mandates on electromagnetic interference. He said he expects the FAA to soon approve the use of 13.56-MHz

tags on commercial aircraft.

From a global perspective, 13.56-MHz tags are ideal, Porad said, because that frequency is approved for use worldwide — although its practicality is somewhat limited because the maximum range between RFID tags and readers is just 1 meter.

In future tests, including the one with Delta, Boeing plans to use tags that operate at 915 MHz and have a read range of roughly 60 feet. But those tags were developed for the retail industry and currently are limited to the 256-bit storage capacity. In addition, they can't be deployed in Europe because of prohibitions against the use of that frequency for RFID applications. **47350**

Citigroup to Support Video Streaming on 300k PCs

Will use for training and market updates

BY LUCAS MEARIAN

As part of a multiyear project, Citigroup Inc. has begun rolling out technology from IBM and other vendors that will let the financial services firm stream live or archived videos and multimedia content to about 300,000 PCs.

Citigroup will use the content-delivery system to train employees and send financial market updates and internal corporate announcements to its workers worldwide, said Tony Raimundo, senior vice president of digital media and collaborative technologies at the New York-based company.

Raimundo said Citigroup started designing the system two years ago and expects to install software agents that support it on about 150,000 PCs in 52 offices this year. Another 150,000 PCs are scheduled to be equipped with the

agents next year, he added.

The technology Citigroup plans to use is part of an integrated set of products called Digital Media for Banking. IBM announced the bundle last month at a technology conference held in Boston by TowerGroup, a research firm that focuses on financial services IT.

Digital Media for Banking includes IBM's Intel-based xSeries servers, plus its DB2 database and content management software and WebSphere middleware. The bundle also incorporates Cisco Systems Inc.'s routers and its Application and Content Networking System software, which provides local caching and content-delivery capabilities. Streaming media software developed by Media Publisher Inc. in Berkeley, Calif., is included as well.

"Ultimately, we'd like to stream [content] to potentially every desktop and television in Citigroup," Raimundo said.

He added that having video-on-demand capabilities should help improve productivity by allowing employees to watch training or corporate information videos when it's convenient for them.

New Options

"We've done live streaming over satellite, but it was problematic because if you were a worker, you needed to be at your desk at [a specific time] to see it," Raimundo said.

In the past, Citigroup also had to set up live video feeds in conference rooms when it wanted to communicate at a corporatewide level. Raimundo said he's now looking for-

“We've done live streaming over satellite, but it was problematic because . . . you needed to be at your desk at [a specific time] to see it.”

TONY RAIMUNDO, CITIGROUP

ward to being able to stream content directly to end-user PCs. He declined to disclose the cost of the project.

In addition to the interactive video technology that Citigroup is installing, the Digital Media for Banking bundle supports digital content management, video surveillance of facilities and online merchandising via plasma-screen televisions in branch offices.

Metadata about the multimedia content is stored alongside the videos in DB2-based repositories to help streamline the process of searching for archived information, said Keith Myer, a digital media marketing manager at IBM.

Guillermo Kopp, an analyst at Needham, Mass.-based TowerGroup, said there's nothing new about associating metadata with streaming video, audio or graphics files for data mining and distribution purposes. But he added that IBM has structured its technology in a way that links the videos with other data such as customer records and marketing information. **47202**

FRANK HAYES ■ FRANKLY SPEAKING

Big IT: Doomed

BIG IT PROJECTS ARE DOOMED. Want proof? Just look at the four-year, \$100 million-plus project to rebuild the air-travel reservation system run by Sabre Holdings Corp. [QuickLink 46873]. Sabre's decades-old system was 10 million lines of mainframe assembly language code. The new version is C++ and Java running on 17 HP NonStop database machines and 45 Linux servers — which means everything is getting overhauled. And halfway through the project, it's all working.

So how does this big — and successful — IT project prove that big IT projects are doomed? It became successful only because Sabre stopped running it as a big IT project.

See, Sabre has tried to overhaul its reservation system before — most infamously from 1988 to 1992, when it spent \$125 million on a megaproject to do just that. This was Sabre's giant leap into the future. Project architects polished the design down to the last interface and buffer. Project managers broke it into manageable pieces to be built in parallel, just the way the experts said it should be done.

After three and a half years of development, the pieces were put together into a finished system. It didn't work well. Three months before the project was set to go live, with partners like Budget Rent A Car and the Hilton and Marriott hotel chains waiting to use it, managers began to realize the problems might not be fixable.

A few weeks ahead of the promised completion date, Sabre had to junk the entire system.

Now that was a big, doomed IT project. And for 10 years, it spooked Sabre away from anything that big.

So what makes this new four-year, \$100 million-plus success different from that old four-year, \$100 million-plus catastrophe?

This time, it wasn't a big leap. Borrowing techniques from so-called agile programming, Sabre did it as a series of small steps.

Because of that, the project's architecture has already changed twice so far. Originally, all the mainframe functions were going to be ported to the fault-tolerant NonStop servers. As the project progressed, some of those functions were shifted to Unix servers. Then they were moved to Linux. And the data-replication system was also rearchitected midstream.

As a result, the system already looks a lot different now than the design did in 2001, when the project started. Small steps — and a willingness to change direction — make that possible.

Small steps also make it possible to respond to changes in technology. That's why Linux, which didn't look like a viable option in 2001, could be brought in later in the game.

And small steps make it possible to go live with each iteration of the system before moving forward — to make sure the technology works and to make sure the system is what users need. If it's not, it can be changed.

That doesn't sound like a big IT project, does it? Everything we expect from a big IT project is missing: the grand, detailed plan; the divide-at-the-start-and-integrate-at-the-end strategy; the years-before-it-goes-live schedule.

That approach has doomed big IT projects for generations. It had too much risk built into it, requiring too many predictions in the face of too much change — and depending on too much perfection in execution.

Now that approach itself is doomed. There's no longer any justification for putting a major project at risk with a traditional big IT project approach. We know it doesn't work.

And we know what does work. We've seen it at Sabre.

So don't fear big, doomed projects. Break them down. Take them live as a series of small steps. Change your designs in response to new technology — and as you go, make sure they work.

That way, no matter how large they get, your IT projects never have to be doomed again. ☐ 47311



FRANK HAYES, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank.hayes@computerworld.com.

Darn Newfangled Pay Stubs!

Support pilot fish is trying to explain to employees who are not office workers — and have no computer experience at all — how to view their new online pay stubs. "The built-in browser for a large Internet provider does not work well with the 'paycheck' Web site," fish reports. "The solution is to leave the ISP logged on and start Internet Explorer. I ask one user to do this, and he reports that Explorer is not installed. I ask, 'This is a Windows machine, right?' His reply: 'I just got it and don't know what is installed.'"

Um, No

Distribution company gets a complaint from an independent retailer that he's being double-billed for every shipment. "The accounting group and I spent days poring through invoice file backups

and could not find a single duplication," says pilot fish working there.

"Then I recalled a programming change made at the request of some dealers: We had added the item and extended cost on the packing slips. The dealer was paying both the packing slip and a fixed invoice. The two documents look too much alike," he said. "Could you please change the color of the fax to distinguish it from the packing slip?"

Hot Idea

For days, user keeps getting a warning beep when he reboots his PC. So he goes into the BIOS and turns off the alarm, which is for the CPU temperature. "But how could the temperature be wrong?" says support pilot fish. "A few days later, the system was dead. The very hot processor was due to the fact that the proces-

SHARK TANK

sor fan was toast — that's why the warning was issued. And during the attempt to fix the PC, the user's hard disk was erased. But at least that darn system warning was gone."

It's Official

Pilot fish applies for a mortgage, and along with the usual piles of paperwork sends printed receipts from her electronically distributed paycheck. "A few weeks later, the mortgage company called and told me they couldn't accept my printed electronic pay stub because it didn't look official," says fish. "I told them they could easily call my employer and verify that this was a valid pay stub, but the mortgage guy insisted it had to be 'like an ADP pay stub or even a proof-of-employment letter from your HR department.' I wholeheartedly agreed to get the letter from HR — since my job in the company's HR department involved automating proof-of-employment letters, complete with electronically applied signature. No way could they be tampered with, right?"

SEND SHARKY YOUR tamper-proof true tale of IT life to sharky@computerworld.com. You score a sharp Shark shirt if I use it. And check out the daily feed, browse the Sharkives and sign up for Shark Tank home delivery at computerworld.com/sharky.

WHEN'S THE LAST TIME you gave your communications network a thorough physical? With Avaya Global Services, you don't have to because we do. We can cost-effectively diagnose and treat potential problems across your entire network before they can interrupt your business.

Almost as if your network healed itself. When alarms do occur, we use EXPERT Systems™ proactive tools to diagnose and treat 96% of them remotely.* Avaya Global Services is a global leader in IP telephony and PBX maintenance. Our professionals are trained and

certified to work in all kinds of multi-vendor, multi-technology networks. So whatever shape your network's in, we'll take care of you the whole way. And we promise it won't hurt a bit. Visit us at avaya.com/doctor or call 866-GO AVAYA.

IP Telephony

Contact Centers

Unified Communication

Services



YOUR BODY
gets checked every year.

YOUR CAR
gets checked every 3,000 miles.

YOUR ENTIRE NETWORK
*gets checked all day, every day
by Avaya Global Services.*

the Oracle Platform

Database 10g Application Server 10g

Common LDAP directory

Unified security model

Common administration

Automated space management

Engineered to work together

ORACLE®

oracle.com/platform
or call 1.800.633.0753

